SEQUENCE LISTING

<110>   EXELIXIS, INC.

<120>   MBMs AS MODIFIERS OF BRANCHING MORPHOGENESIS AND METHODS OF USE

<130>   EX03-075C-PC

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<151>   2002-10-23

<150>   US 60/436,941
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<213> Homo sapiens

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31

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<213>   Homo sapiens

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<213> Homo sapiens

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tatgaatgga tattcattgc atggtctcca gatcattctc atgttcgtca aaaaatgttg      360

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38

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43

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45

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gagagcccag gcctaggcag gaggcctgga accctcttgg ctaaggtgct gttcctgttc    2940

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<213>    Homo sapiens

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aagcagaatg accagcgaaa gtggaaaaga aaagccgaac cacatgaaac tagccaaggg    180

aaaggcactg ctgggggacg taaaattagt gattactttg agtttgctgg gggaagcggg    240

ccagggacca gccctggcag aaaatcttat caagcatcag aaaaggataa attcacagag    300

ggaagagata gacaacggaa aatgttagca aagcggaaac ctcctgccat gggtcaggac    360

cctcctgcaa ccagtgagca gaaacagtgg aaaagcagga ccaatggagc tgaaaataaa    420

acgttaacat tagcagaata ccatgaacaa gaagaaatct tcaaactccg gttaggtcat    480

cttaaaaagg aggaagcaga gatccaggca gagctggaaa ggctagaaag ggttagaaat    540

ctacgtatcg gggaactaaa aaggatacat aatgaagata actcacaatt taaagatcat    600

ccaatgctaa atgacagata tttgttgtta catcttttgg atagaggagg tttcagtaaa    660

gtttacaagg catttgaact aatagagcaa agatacgtag ctgtgaaaat tcaccagtta    720
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ataaaaact ggagagatga gaaaaaggag aattaccaca agcatgcatg tagggaatac    780

tggattcata aagaactgga tcatcccaga ataattaagc tgtatgatta cttttcactg    840

gatactgact cattttgtac agtgttagaa tactgtgagg gaaatgatct aaacttctat    900

ctgaaacggc acaaattaat gtcagagaaa gaggcctggt ccattatcat gcagactgta    960

aatgctttaa agtacttaaa taaaataaaa cctcccatca tacactatga cctcaaacca   1020

gggaatattc ttttagtaaa tggtacagtg tgtggagaga gaaaaattac agagcttggt   1080

ctttcgaaga tcatggatga tgatagctac aattcatgtc tttctggagg gaagcctttt   1140

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<212> DNA
<213> Homo sapiens

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cggcggcggc ggcggcagca gaaatgatgg aagaattgca tagcctggac ccacgacggc    180

aggaattatt ggaggccagg tttactggag taggtgttag taagggacca cttaatagtg    240

agtcttccaa ccagagcttg tgcagcgtcg gatccttgag tgataaagaa gtagagactc    300

ccgagaaaaa gcagaatgac cagcgaaatc ggaaaagaaa agctgaacca tatgaaacta    360

gccaagggaa aggcactcct aggggacata aaattagtga ttactttgag tttgctgggg    420

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aacattcctt atccaatccc ttaccgcgac gagtagaaca gcccctctat ggtttagatg    540

gcagtgctgc aaaggaggca acggaggagc agtctgctct gccaaccctc atgtcagtga    600

tgctagcaaa acctcggctt gacacagagc agctggcgca aaggggagct ggcctctgct    660

tcacttttgt ttcagctcag caaaacagtc cctcatctac gggatctggc aacacagagc    720

attcctgcag ctcccaaaaa cagatctcca tccagcacag acggacccag tccgacctca    780

caatagaaaa aatatctgca ctagaaaaca gtaagaattc tgacttagag aagaaggagg    840

gaagaataga tgatttatta agagccaact gtgatttgag acggcagatt gatgaacagc    900

aaaagatgct agagaaatac aaggaacgat taaatagatg tgtgacaatg agcaagaaac    960

tccttataga aaagtcaaaa caagagaaga tggcgtgtag agataagagc atgcaagacc   1020

gcttgagact gggccacttt actactgtcc gacacggagc ctcatttact gaacagtgga   1080
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cccctcctgc aaccaatgag cagaaacagc ggaaaagcaa gaccaatgga gctgaaaatg   1260

aaacgttaac gttagcagaa taccatgaac aagaagaaat cttcaaactc agattaggtc   1320

atcttaaaaa ggaggaagca gagatccagg cagagctgga gagactagaa agggttagaa   1380

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atccaacgct aaatgacaga tatttgttgt tacatctttt gggtagagga ggtttcagtg   1500

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taaataaaaa ctggagagat gagaaaaagg agaattacca caagcatgca tgtagggaat   1620

accggattca taaagagctg gatcatccca gaatagttaa gctgtatgat tacttttcac   1680

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tgaatgcttt aaagtactta aatgaaataa aacctcccat catacactat gacctcaaac   1860

caggtaatat tcttttagta aatggtacag cgtgtggaga gataaaaatt acagattttg   1920

gtctttcgaa gatcatggat gatgatagct acaattcagt ggatggcatg gagctaacat   1980

cacaaggtgc tggtacttat tggtatttac caccagagtg ttttgtggtt gggaaagaac   2040

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gactccaagg ccacaaactg ttcaacacac acaaagtgga caaatggcgt tcagcagcgg   2460

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ggcagctccg gccaggcctt gtaggaaaag gccccgcccg aggttccagc gtcaacggcc   2640

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gtgaacttga aaacttgcag actcaggggg gtccctgatg cagtgcttca gatgaagaat   2760

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caaagaatga  ggttagaaga  ctgcagcttg  gagtctctct  aggttttcaa  ctatttcttc      3240

acaatttgaa  cacttgacgg  ttgtcccttt  taatttattt  gaagtgctat  ttttttaaat      3300

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<213>    Homo sapiens

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agattgagga  caaaattgga  gaaggcactt  tcagctctgt  ttatttggcc  acagcacagt       360

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cagattttta gcttccctaa ttacctttca ctgacataca gaaaaggag cagttttagt     2160

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acatgtattc attttgttat tttgagcatt gataggtcag tatatctacc taatctgttt    3060

ggtaagtata ggatatataa accattacca ttgatctgtc ttatgccata atcttaaaaa    3120
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<212>   DNA
<213>   Homo sapiens

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gtgaggcacc aggagaccgg cggccactac gccatgaaga tcctcaacaa gcagaaggtg   240

gtgaagatga agcaggtcga gcacatactg aacgagaagc gcatcctgca ggcgatcgac   300

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gagccccatg cctgtttcta tgccgcccag gtcgtcctgg ccgtccagta cctacactcg   480

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ctgcaggtga cggacttcgg tttcgccaag cgcgtgaagg ccgcacttg gaccttgtgc   600

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<211>   518
<212>   PRT
<213>   Homo sapiens

<400>   32

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1               5                   10                  15


Phe Glu Glu Leu Gly Lys Gly Ala Phe Ser Val Val Arg Arg Cys Val
            20                  25                  30


Lys Lys Thr Ser Thr Gln Glu Tyr Ala Ala Lys Ile Ile Asn Thr Lys
        35                  40                  45


Lys Leu Ser Ala Arg Asp His Gln Lys Leu Glu Arg Glu Ala Arg Ile
    50                  55                  60


Cys Arg Leu Leu Lys His Pro Asn Ile Val Arg Leu His Asp Ser Ile
65                  70                  75                  80


Ser Glu Glu Gly Phe His Tyr Leu Val Phe Asp Leu Val Thr Gly Gly
                85                  90                  95


Glu Leu Phe Glu Asp Ile Val Ala Arg Glu Tyr Tyr Ser Glu Ala Asp
            100                 105                 110


Ala Ser His Cys Ile His Gln Ile Leu Glu Ser Val Asn His Ile His
        115                 120                 125


Gln His Asp Ile Val His Arg Asp Leu Lys Pro Glu Asn Leu Leu Leu
    130                 135                 140


Ala Ser Lys Cys Lys Gly Ala Ala Val Lys Leu Ala Asp Phe Gly Leu
145                 150                 155                 160


Ala Ile Glu Val Gln Gly Glu Gln Gln Ala Trp Phe Gly Phe Ala Gly
                165                 170                 175


Thr Pro Gly Tyr Leu Ser Pro Glu Val Leu Arg Lys Asp Pro Tyr Gly
                180                 185                 190


Lys Pro Val Asp Ile Trp Ala Cys Gly Val Ile Leu Tyr Ile Leu Leu
        195                 200                 205


Val Gly Tyr Pro Pro Phe Trp Asp Glu Asp Gln His Lys Leu Tyr Gln
    210                 215                 220
```

52

```
Gln Ile Lys Ala Gly Ala Tyr Asp Phe Pro Ser Pro Glu Trp Asp Thr
225             230             235             240


Val Thr Pro Glu Ala Lys Asn Leu Ile Asn Gln Met Leu Thr Ile Asn
            245             250             255


Pro Ala Lys Arg Ile Thr Ala Asp Gln Ala Leu Lys His Pro Trp Val
            260             265             270


Cys Gln Arg Ser Thr Val Ala Ser Met Met His Arg Gln Glu Thr Val
            275             280             285


Glu Cys Leu Arg Lys Phe Asn Ala Arg Arg Lys Leu Lys Gly Ala Ile
    290             295             300


Leu Thr Thr Met Leu Val Ser Arg Asn Phe Ser Ala Ala Lys Ser Leu
305             310             315             320


Leu Asn Lys Lys Ser Asp Gly Gly Val Lys Pro Gln Ser Asn Asn Lys
            325             330             335


Asn Ser Leu Val Ser Pro Ala Gln Glu Pro Ala Pro Leu Gln Thr Ala
            340             345             350


Met Glu Pro Gln Thr Thr Val Val His Asn Ala Thr Asp Gly Ile Lys
            355             360             365


Gly Ser Thr Glu Ser Cys Asn Thr Thr Thr Glu Asp Glu Asp Leu Lys
    370             375             380


Val Arg Lys Gln Glu Ile Ile Lys Ile Thr Glu Gln Leu Ile Glu Ala
385             390             395             400


Ile Asn Asn Gly Asp Phe Glu Ala Tyr Thr Lys Ile Cys Asp Pro Gly
            405             410             415


Leu Thr Ser Phe Glu Pro Glu Ala Leu Gly Asn Leu Val Glu Gly Met
            420             425             430


Asp Phe His Lys Phe Tyr Phe Glu Asn Leu Leu Ser Lys Asn Ser Lys
    435             440             445


Pro Ile His Thr Thr Ile Leu Asn Pro His Val His Val Ile Gly Glu
    450             455             460
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Asp Ala Ala Cys Ile Ala Tyr Ile Arg Leu Thr Gln Tyr Ile Asp Gly
465   470   475   480

Gln Gly Arg Pro Arg Thr Ser Gln Ser Glu Glu Thr Arg Val Trp His
            485   490   495

Arg Arg Asp Gly Lys Trp Leu Asn Val His Tyr His Cys Ser Gly Ala
            500   505   510

Pro Ala Ala Pro Leu Gln
        515

<210>   33
<211>   607
<212>   PRT
<213>   Homo sapiens

<400>   33

Met Leu Ala Gly Leu Pro Thr Ser Asp Pro Gly Arg Leu Ile Thr Asp
1   5   10   15

Pro Arg Ser Gly Arg Thr Tyr Leu Lys Gly Arg Leu Leu Gly Lys Gly
            20   25   30

Gly Phe Ala Arg Cys Tyr Glu Ala Thr Asp Thr Glu Thr Gly Ser Ala
        35   40   45

Tyr Ala Val Lys Val Ile Pro Gln Ser Arg Val Ala Lys Pro His Gln
    50   55   60

Arg Glu Lys Ile Leu Asn Glu Ile Glu Leu His Arg Asp Leu Gln His
65   70   75   80

Arg His Ile Val Arg Phe Ser His His Phe Glu Asp Ala Asp Asn Ile
            85   90   95

Tyr Ile Phe Leu Glu Leu Cys Ser Arg Lys Ser Leu Ala His Ile Trp
            100   105   110

Lys Ala Arg His Thr Leu Leu Glu Pro Glu Val Arg Tyr Tyr Leu Arg
        115   120   125

Gln Ile Leu Ser Gly Leu Lys Tyr Leu His Gln Arg Gly Ile Leu His
        130   135   140

Arg Asp Leu Lys Leu Gly Asn Phe Phe Ile Thr Glu Asn Met Glu Leu
145   150   155   160

54

Lys Val Gly Asp Phe Gly Leu Ala Ala Arg Leu Glu Pro Pro Glu Gln
            165   170   175

Arg Lys Lys Thr Ile Cys Gly Thr Pro Asn Tyr Val Ala Pro Glu Val
            180   185   190

Leu Leu Arg Gln Gly His Gly Pro Glu Ala Asp Val Trp Ser Leu Gly
            195   200   205

Cys Val Met Tyr Thr Leu Leu Cys Gly Ser Pro Pro Phe Glu Thr Ala
210   215   220

Asp Leu Lys Glu Thr Tyr Arg Cys Ile Lys Gln Val His Tyr Thr Leu
225   230   235   240

Pro Ala Ser Leu Ser Leu Pro Ala Arg Gln Leu Leu Ala Ala Ile Leu
            245   250   255

Arg Ala Ser Pro Arg Asp Arg Pro Ser Ile Asp Gln Ile Leu Arg His
            260   265   270

Asp Phe Phe Thr Lys Gly Tyr Thr Pro Asp Arg Leu Pro Ile Ser Ser
            275   280   285

Cys Val Thr Val Pro Asp Leu Thr Pro Pro Asn Pro Ala Arg Ser Leu
290   295   300

Phe Ala Lys Val Thr Lys Ser Leu Phe Gly Arg Lys Lys Lys Ser Lys
305   310   315   320

Asn His Ala Gln Glu Arg Asp Glu Val Ser Gly Leu Val Ser Gly Leu
            325   330   335

Met Arg Thr Ser Val Gly His Gln Asp Ala Arg Pro Glu Ala Pro Ala
            340   345   350

Ala Ser Gly Pro Ala Pro Val Ser Leu Val Glu Thr Ala Pro Glu Asp
            355   360   365

Ser Ser Pro Arg Gly Thr Leu Ala Ser Ser Gly Asp Gly Phe Glu Glu
370   375   380

Gly Leu Thr Val Ala Thr Val Val Glu Ser Ala Leu Cys Ala Leu Arg
385   390   395   400

Asn Cys Ile Ala Phe Met Pro Pro Ala Glu Gln Asn Pro Ala Pro Leu

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                    405                    410                    415

Ala Gln Pro Glu Pro Leu Val Trp Val Ser Lys Trp Val Asp Tyr Ser
            420                 425                 430

Asn Lys Phe Gly Phe Gly Tyr Gln Leu Ser Ser Arg Arg Val Ala Val
            435                 440                 445

Leu Phe Asn Asp Gly Thr His Met Ala Leu Ser Ala Asn Arg Lys Thr
    450                 455                 460

Val His Tyr Asn Pro Thr Ser Thr Lys His Phe Ser Phe Ser Val Gly
465                 470                 475                 480

Ala Val Pro Arg Ala Leu Gln Pro Gln Leu Gly Ile Leu Arg Tyr Phe
                485                 490                 495

Ala Ser Tyr Met Glu Gln His Leu Met Lys Gly Gly Asp Leu Pro Ser
            500                 505                 510

Val Glu Glu Val Glu Val Pro Ala Pro Pro Leu Leu Leu Gln Trp Val
    515                 520                 525

Lys Thr Asp Gln Ala Leu Leu Met Leu Phe Ser Asp Gly Thr Val Gln
    530                 535                 540

Val Asn Phe Tyr Gly Asp His Thr Lys Leu Ile Leu Ser Gly Trp Glu
545                 550                 555                 560

Pro Leu Leu Val Thr Phe Val Ala Arg Asn Arg Ser Ala Cys Thr Tyr
                565                 570                 575

Leu Ala Ser His Leu Arg Gln Leu Gly Cys Ser Pro Asp Leu Arg Gln
            580                 585                 590

Arg Leu Arg Tyr Ala Leu Arg Leu Leu Arg Asp Arg Ser Pro Ala
        595                 600                 605
```

```
<210>  34
<211>  421
<212>  PRT
<213>  Homo sapiens

<400>  34

Met Ala Ser Ser Ser Val Pro Pro Ala Thr Val Ser Ala Ala Thr Ala
1               5                   10                  15
```

```
Gly Pro Gly Pro Gly Phe Gly Phe Ala Ser Lys Thr Lys Lys Lys His
             20          25              30


Phe Val Gln Gln Lys Val Lys Val Phe Arg Ala Ala Asp Pro Leu Val
         35          40              45


Gly Val Phe Leu Trp Gly Val Ala His Ser Ile Asn Glu Leu Ser Gln
     50          55              60


Val Pro Pro Pro Val Met Leu Leu Pro Asp Asp Phe Lys Ala Ser Ser
65          70              75              80


Lys Ile Lys Val Asn Asn His Leu Phe His Arg Glu Asn Leu Pro Ser
             85          90              95


His Phe Lys Phe Lys Glu Tyr Cys Pro Gln Val Phe Arg Asn Leu Arg
             100             105             110


Asp Arg Phe Gly Ile Asp Asp Gln Asp Tyr Leu Val Ser Leu Thr Arg
         115             120             125


Asn Pro Pro Ser Glu Ser Glu Gly Ser Asp Gly Arg Phe Leu Ile Ser
     130             135             140


Tyr Asp Arg Thr Leu Val Ile Lys Glu Val Ser Ser Glu Asp Ile Ala
145             150             155             160


Asp Met His Ser Asn Leu Ser Asn Tyr His Gln Tyr Ile Val Lys Cys
             165             170             175


His Gly Asn Thr Leu Leu Pro Gln Phe Leu Gly Met Tyr Arg Val Ser
             180             185             190


Val Asp Asn Glu Asp Ser Tyr Met Leu Val Met Arg Asn Met Phe Ser
         195             200             205


His Arg Leu Pro Val His Arg Lys Tyr Asp Leu Lys Gly Ser Leu Val
     210             215             220


Ser Arg Glu Ala Ser Asp Lys Glu Lys Val Lys Glu Leu Pro Thr Leu
225             230             235             240


Arg Asp Met Asp Phe Leu Asn Lys Asn Gln Lys Val Tyr Ile Gly Glu
             245             250             255


Glu Glu Lys Lys Ile Phe Leu Glu Lys Leu Lys Arg Asp Val Glu Phe
             260             265             270
```

57

```
Leu Val Gln Leu Lys Ile Met Asp Tyr Ser Leu Leu Leu Gly Ile His
        275                 280                 285


Asp Ile Ile Arg Gly Ser Glu Pro Glu Glu Glu Ala Pro Val Arg Glu
        290                 295                 300


Asp Glu Ser Glu Val Asp Gly Asp Cys Ser Leu Thr Gly Pro Pro Ala
305                 310                 315                 320


Leu Val Gly Ser Tyr Gly Thr Ser Pro Glu Gly Ile Gly Gly Tyr Ile
                325                 330                 335


His Ser His Arg Pro Leu Gly Pro Gly Glu Phe Glu Ser Phe Ile Asp
            340                 345                 350


Val Tyr Ala Ile Arg Ser Ala Glu Gly Ala Pro Gln Lys Glu Val Tyr
        355                 360                 365


Phe Met Gly Leu Ile Asp Ile Leu Thr Gln Tyr Asp Ala Lys Lys Lys
        370                 375                 380


Ala Ala His Ala Ala Lys Thr Val Lys His Gly Ala Gly Ala Glu Ile
385                 390                 395                 400


Ser Thr Val His Pro Glu Gln Tyr Ala Lys Arg Phe Leu Asp Phe Ile
                405                 410                 415


Thr Asn Ile Phe Ala
            420


<210>   35
<211>   574
<212>   PRT
<213>   Homo sapiens

<400>   35

Met Arg Asp Pro Gly Ala Ala Ala Pro Leu Ser Ser Leu Gly Leu Cys
1               5                   10                  15


Ala Leu Val Leu Ala Leu Leu Gly Ala Leu Ser Ala Gly Ala Gly Ala
                20                  25                  30


Gln Pro Tyr His Gly Glu Lys Gly Ile Ser Val Pro Asp His Gly Phe
        35                  40                  45


Cys Gln Pro Ile Ser Ile Pro Leu Cys Thr Asp Ile Ala Tyr Asn Gln
```

58

```
                50                        55                        60

Thr Ile Leu Pro Asn Leu Leu Gly His Thr Asn Gln Glu Asp Ala Gly
65              70              75                      80

Leu Glu Val His Gln Phe Tyr Pro Leu Val Lys Val Gln Cys Ser Pro
            85              90                      95

Glu Leu Arg Phe Phe Leu Cys Ser Met Tyr Ala Pro Val Cys Thr Val
            100             105                     110

Leu Asp Gln Ala Ile Pro Pro Cys Arg Ser Leu Cys Glu Arg Ala Arg
            115             120                     125

Gln Gly Cys Glu Ala Leu Met Asn Lys Phe Gly Phe Gln Trp Pro Glu
    130             135                     140

Arg Leu Arg Cys Glu Asn Phe Pro Val His Gly Ala Gly Glu Ile Cys
145             150                     155             160

Val Gly Gln Asn Thr Ser Asp Gly Ser Gly Gly Pro Gly Gly Gly Pro
            165                     170                     175

Thr Ala Tyr Pro Thr Ala Pro Tyr Leu Pro Asp Leu Pro Phe Thr Ala
            180                     185                     190

Leu Pro Pro Gly Ala Ser Asp Gly Arg Gly Arg Pro Ala Phe Pro Phe
        195                     200                     205

Ser Cys Pro Arg Gln Leu Lys Val Pro Pro Tyr Leu Gly Tyr Arg Phe
    210                     215                     220

Leu Gly Glu Arg Asp Cys Gly Ala Pro Cys Glu Pro Gly Arg Ala Asn
225                     230                     235                     240

Gly Leu Met Tyr Phe Lys Glu Glu Glu Arg Arg Phe Ala Arg Leu Trp
            245                     250                     255

Val Gly Val Trp Ser Val Leu Cys Cys Ala Ser Thr Leu Phe Thr Val
            260                     265                     270

Leu Thr Tyr Leu Val Asp Met Arg Arg Phe Ser Tyr Pro Glu Arg Pro
            275                     280                     285

Ile Ile Phe Leu Ser Gly Cys Tyr Phe Met Val Ala Val Ala His Val
    290                     295                     300
```

```
Ala Gly Phe Leu Leu Glu Asp Arg Ala Val Cys Val Glu Arg Phe Ser
305                 310             315                 320

Asp Asp Gly Tyr Arg Thr Val Ala Gln Gly Thr Lys Lys Glu Gly Cys
                325                 330                 335

Thr Ile Leu Phe Met Val Leu Tyr Phe Phe Gly Met Ala Ser Ser Ile
                340                 345                 350

Trp Trp Val Ile Leu Ser Leu Thr Trp Phe Leu Ala Ala Gly Met Lys
                355                 360                 365

Trp Gly His Glu Ala Ile Glu Ala Asn Ser Gln Tyr Phe His Leu Ala
    370                 375                 380

Ala Trp Ala Val Pro Ala Val Lys Thr Ile Thr Ile Leu Ala Met Gly
385                 390                 395                 400

Gln Val Asp Gly Asp Leu Leu Ser Gly Val Cys Tyr Val Gly Leu Ser
                405                 410                 415

Ser Val Asp Ala Leu Arg Gly Phe Val Leu Ala Pro Leu Phe Val Tyr
                420                 425                 430

Leu Phe Ile Gly Thr Ser Phe Leu Leu Ala Gly Phe Val Ser Leu Phe
                435                 440                 445

Arg Ile Arg Thr Ile Met Lys His Asp Gly Thr Lys Thr Glu Lys Leu
    450                 455                 460

Glu Lys Leu Met Val Arg Ile Gly Val Phe Ser Val Leu Tyr Thr Val
465                 470                 475                 480

Pro Ala Thr Ile Val Leu Ala Cys Tyr Phe Tyr Glu Gln Ala Phe Arg
                485                 490                 495

Glu His Trp Glu Arg Thr Trp Leu Leu Gln Thr Cys Lys Ser Tyr Ala
                500                 505                 510

Val Pro Cys Pro Pro Gly His Phe Pro Pro Met Ser Pro Asp Phe Thr
                515                 520                 525

Val Phe Met Ile Lys Tyr Leu Met Thr Met Ile Val Gly Ile Thr Thr
                530                 535                 540

Gly Phe Trp Ile Trp Ser Gly Lys Thr Leu Gln Ser Trp Arg Arg Phe
```

60

<pre>
545   550   555   560
</pre>

Tyr His Arg Leu Ser His Ser Ser Lys Gly Glu Thr Ala Val
                565   570

<210> 36
<211> 420
<212> PRT
<213> Homo sapiens

<400> 36

Met Ser Gly Arg Pro Arg Thr Thr Ser Phe Ala Glu Ser Cys Lys Pro
1   5   10   15

Val Gln Gln Pro Ser Ala Phe Gly Ser Met Lys Val Ser Arg Asp Lys
            20   25   30

Asp Gly Ser Lys Val Thr Thr Val Val Ala Thr Pro Gly Gln Gly Pro
        35   40   45

Asp Arg Pro Gln Glu Val Ser Tyr Thr Asp Thr Lys Val Ile Gly Asn
    50   55   60

Gly Ser Phe Gly Val Val Tyr Gln Ala Lys Leu Cys Asp Ser Gly Glu
65   70   75   80

Leu Val Ala Ile Lys Lys Val Leu Gln Asp Lys Arg Phe Lys Asn Arg
                85   90   95

Glu Leu Gln Ile Met Arg Lys Leu Asp His Cys Asn Ile Val Arg Leu
            100   105   110

Arg Tyr Phe Phe Tyr Ser Ser Gly Glu Lys Lys Asp Glu Val Tyr Leu
        115   120   125

Asn Leu Val Leu Asp Tyr Val Pro Glu Thr Val Tyr Arg Val Ala Arg
    130   135   140

His Tyr Ser Arg Ala Lys Gln Thr Leu Pro Val Ile Tyr Val Lys Leu
145   150   155   160

Tyr Met Tyr Gln Leu Phe Arg Ser Leu Ala Tyr Ile His Ser Phe Gly
                165   170   175

Ile Cys His Arg Asp Ile Lys Pro Gln Asn Leu Leu Leu Asp Pro Asp
                180   185   190

```
Thr Ala Val Leu Lys Leu Cys Asp Phe Gly Ser Ala Lys Gln Leu Val
    195                 200             205

Arg Gly Glu Pro Asn Val Ser Tyr Ile Cys Ser Arg Tyr Tyr Arg Ala
    210             215             220

Pro Glu Leu Ile Phe Gly Ala Thr Asp Tyr Thr Ser Ser Ile Asp Val
225             230             235                 240

Trp Ser Ala Gly Cys Val Leu Ala Glu Leu Leu Leu Gly Gln Pro Ile
            245             250             255

Phe Pro Gly Asp Ser Gly Val Asp Gln Leu Val Glu Ile Ile Lys Val
            260             265             270

Leu Gly Thr Pro Thr Arg Glu Gln Ile Arg Glu Met Asn Pro Asn Tyr
    275             280             285

Thr Glu Phe Lys Phe Pro Gln Ile Lys Ala His Pro Trp Thr Lys Val
    290             295             300

Phe Arg Pro Arg Thr Pro Pro Glu Ala Ile Ala Leu Cys Ser Arg Leu
305             310             315                 320

Leu Glu Tyr Thr Pro Thr Ala Arg Leu Thr Pro Leu Glu Ala Cys Ala
            325             330             335

His Ser Phe Phe Asp Glu Leu Arg Asp Pro Asn Val Lys His Pro Asn
            340             345             350

Gly Arg Asp Thr Pro Ala Leu Phe Asn Phe Thr Thr Gln Glu Leu Ser
    355             360             365

Ser Asn Pro Pro Leu Ala Thr Ile Leu Ile Pro Pro His Ala Arg Ile
    370             375             380

Gln Ala Ala Ala Ser Thr Pro Thr Asn Ala Thr Ala Ala Ser Asp Ala
385             390             395                 400

Asn Thr Gly Asp Arg Gly Gln Thr Asn Asn Ala Ala Ser Ala Ser Ala
            405             410             415

Ser Asn Ser Thr
            420
```

```
<210>  37
<211>  1215
```

```
<212>    PRT
<213>    Homo sapiens

<400>    37
```

Met	Ala	Ser	Gln	Val	Leu	Val	Tyr	Pro	Pro	Tyr	Val	Tyr	Gln	Thr	Gln
1				5					10					15	

Met Ala Ser Gln Val Leu Val Tyr Pro Pro Tyr Val Tyr Gln Thr Gln
1   5   10   15

Ser Ser Ala Phe Cys Ser Val Lys Lys Leu Lys Val Glu Pro Ser Ser
              20   25   30

Cys Val Phe Gln Glu Arg Asn Tyr Pro Arg Thr Tyr Val Asn Gly Arg
              35   40   45

Asn Phe Gly Asn Ser His Pro Pro Thr Lys Gly Ser Ala Phe Gln Thr
        50   55   60

Lys Ile Pro Phe Asn Arg Pro Arg Gly His Asn Phe Ser Leu Gln Thr
65   70   75   80

Ser Ala Val Val Leu Lys Asn Thr Ala Gly Ala Thr Lys Val Ile Ala
                85   90   95

Ala Gln Ala Gln Gln Ala His Val Gln Ala Pro Gln Ile Gly Ala Trp
              100   105   110

Arg Asn Arg Leu His Phe Leu Glu Gly Pro Gln Arg Cys Gly Leu Lys
        115   120   125

Arg Lys Ser Glu Glu Leu Asp Asn His Ser Ser Ala Met Gln Ile Val
        130   135   140

Asp Glu Leu Ser Ile Leu Pro Ala Met Leu Gln Thr Asn Met Gly Asn
145   150   155   160

Pro Val Thr Val Val Thr Ala Thr Thr Gly Ser Lys Gln Asn Cys Thr
                165   170   175

Thr Gly Glu Gly Asp Tyr Gln Leu Val Gln His Glu Val Leu Cys Ser
              180   185   190

Met Lys Asn Thr Tyr Glu Val Leu Asp Phe Leu Gly Arg Gly Thr Phe
        195   200   205

Gly Gln Val Val Lys Cys Trp Lys Arg Gly Thr Asn Glu Ile Val Ala
        210   215   220

Ile Lys Ile Leu Lys Asn His Pro Ser Tyr Ala Arg Gln Gly Gln Ile
```

225                 230                 235                 240

Glu Val Ser Ile Leu Ala Arg Leu Ser Thr Glu Asn Ala Asp Glu Tyr
            245                 250                 255

Asn Phe Val Arg Ala Tyr Glu Cys Phe Gln His Arg Asn His Thr Cys
            260                 265                 270

Leu Val Phe Glu Met Leu Glu Gln Asn Leu Tyr Asp Phe Leu Lys Gln
            275                 280                 285

Asn Lys Phe Ser Pro Leu Pro Leu Lys Val Ile Arg Pro Ile Leu Gln
            290                 295                 300

Gln Val Ala Thr Ala Leu Lys Lys Leu Lys Ser Leu Gly Leu Ile His
305                 310                 315                 320

Ala Asp Leu Lys Pro Glu Asn Ile Met Leu Val Asp Pro Val Arg Gln
            325                 330                 335

Pro Tyr Arg Val Lys Val Ile Asp Phe Gly Ser Ala Ser His Val Ser
            340                 345                 350

Lys Thr Val Cys Ser Thr Tyr Leu Gln Ser Arg Tyr Tyr Arg Ala Pro
            355                 360                 365

Glu Ile Ile Leu Gly Leu Pro Phe Cys Glu Ala Ile Asp Met Trp Ser
    370                 375                 380

Leu Gly Cys Val Ile Ala Glu Leu Phe Leu Gly Trp Pro Leu Tyr Pro
385                 390                 395                 400

Gly Ala Leu Glu Tyr Asp Gln Ile Arg Tyr Ile Ser Gln Thr Gln Gly
            405                 410                 415

Leu Pro Gly Glu Gln Leu Leu Asn Val Gly Thr Lys Ser Thr Arg Phe
            420                 425                 430

Phe Cys Lys Glu Thr Asp Met Ser His Ser Gly Trp Arg Leu Lys Thr
            435                 440                 445

Leu Glu Glu His Glu Ala Glu Thr Gly Met Lys Ser Lys Glu Ala Arg
    450                 455                 460

Lys Tyr Ile Phe Asn Ser Leu Asp Asp Val Ala His Val Asn Thr Val
465                 470                 475                 480

64

```
Met Asp Leu Glu Gly Ser Asp Leu Leu Ala Glu Lys Ala Asp Arg Arg
              485               490               495

Glu Phe Val Ser Leu Leu Lys Lys Met Leu Leu Ile Asp Ala Asp Leu
              500               505               510

Arg Ile Thr Pro Ala Glu Thr Leu Asn His Pro Phe Val Asn Met Lys
              515               520               525

His Leu Leu Asp Phe Pro His Ser Asn His Val Lys Ser Cys Phe His
    530               535               540

Ile Met Asp Ile Cys Lys Ser His Leu Asn Ser Cys Asp Thr Asn Asn
545               550               555               560

His Asn Lys Thr Ser Leu Leu Arg Pro Val Ala Ser Ser Ser Thr Ala
              565               570               575

Thr Leu Thr Ala Asn Phe Thr Lys Ile Gly Thr Leu Arg Ser Gln Ala
              580               585               590

Leu Thr Thr Ser Ala His Ser Val Val His His Gly Ile Pro Leu Gln
          595               600               605

Ala Gly Thr Ala Gln Phe Gly Cys Gly Asp Ala Phe Gln Gln Thr Leu
    610               615               620

Ile Ile Cys Pro Pro Ala Ile Gln Gly Ile Pro Ala Thr His Gly Lys
625               630               635               640

Pro Thr Ser Tyr Ser Ile Arg Val Asp Asn Thr Val Pro Leu Val Thr
              645               650               655

Gln Ala Pro Ala Val Gln Pro Leu Gln Ile Arg Pro Gly Val Leu Ser
              660               665               670

Gln Thr Trp Ser Gly Arg Thr Gln Gln Met Leu Val Pro Ala Trp Gln
          675               680               685

Gln Val Thr Pro Leu Ala Pro Ala Thr Thr Thr Leu Thr Ser Glu Ser
          690               695               700

Val Ala Gly Ser His Arg Leu Gly Asp Trp Gly Lys Met Ile Ser Cys
705               710               715               720

Ser Asn His Tyr Asn Ser Val Met Pro Gln Pro Leu Leu Thr Asn Gln
```

```
                    725                    730                    735


Ile Thr Leu Ser Ala Pro Gln Pro Val Ser Val Gly Ile Ala His Val
            740                    745                    750


Val Trp Pro Gln Pro Ala Thr Thr Lys Lys Asn Lys Gln Cys Gln Asn
            755                    760                    765


Arg Gly Ile Leu Val Lys Leu Met Glu Trp Glu Pro Gly Arg Glu Glu
            770                    775                    780


Ile Asn Ala Phe Ser Trp Ser Asn Ser Leu Gln Asn Thr Asn Ile Pro
785                    790                    795                    800


His Ser Ala Phe Ile Ser Pro Lys Ile Ile Asn Gly Lys Asp Val Glu
                    805                    810                    815


Glu Val Ser Cys Ile Glu Thr Gln Asp Asn Gln Asn Ser Glu Gly Glu
                    820                    825                    830


Ala Arg Asn Cys Cys Glu Thr Ser Ile Arg Gln Asp Ser Asp Ser Ser
                    835                    840                    845


Val Ser Asp Lys Gln Arg Gln Thr Ile Ile Ile Ala Asp Ser Pro Ser
        850                    855                    860


Pro Ala Val Ser Val Ile Thr Ile Ser Ser Asp Thr Asp Glu Glu Glu
865                    870                    875                    880


Thr Ser Gln Arg His Ser Leu Arg Glu Cys Lys Gly Ser Leu Asp Cys
                    885                    890                    895


Glu Ala Cys Gln Ser Thr Leu Asn Ile Asp Arg Met Cys Ser Leu Ser
                    900                    905                    910


Ser Pro Asp Ser Thr Leu Ser Thr Ser Ser Ser Gly Gln Ser Ser Pro
        915                    920                    925


Ser Pro Cys Lys Arg Pro Asn Ser Met Ser Asp Glu Glu Gln Glu Ser
        930                    935                    940


Ser Cys Asp Thr Val Asp Gly Ser Pro Thr Ser Asp Ser Ser Gly His
945                    950                    955                    960


Asp Ser Pro Phe Ala Glu Ser Thr Phe Val Glu Asp Thr His Glu Asn
                    965                    970                    975
```

```
Thr Glu Leu Val Ser Ser Ala Asp Thr Glu Thr Lys Pro Ala Val Cys
        980                     985                 990


Ser Val Val Val Pro Pro Val Glu  Leu Glu Asn Gly Leu  Asn Ala Asp
        995                 1000                1005


Glu His Met Ala Asn Thr Asp  Ser Ile Cys Gln Pro  Leu Ile Lys
    1010             1015                1020


Gly Arg Ser Ala Pro Gly Arg  Leu Asn Gln Pro Ser  Ala Val Gly
    1025             1030                1035


Thr Arg Gln Gln Lys Leu Thr  Ser Ala Phe Gln Gln  Gln His Leu
    1040             1045                1050


Asn Phe Ser Gln Val Gln His  Phe Gly Ser Gly His  Gln Glu Trp
    1055             1060                1065


Asn Gly Asn Phe Gly His Arg  Arg Gln Gln Ala Tyr  Ile Pro Thr
    1070             1075                1080


Ser Val Thr Ser Asn Pro Phe  Thr Leu Ser His Gly  Ser Pro Asn
    1085             1090                1095


His Thr Ala Val His Ala His  Leu Ala Gly Asn Thr  His Leu Gly
    1100             1105                1110


Gly Gln Pro Thr Leu Leu Pro  Tyr Pro Ser Ser Ala  Thr Leu Ser
    1115             1120                1125


Ser Ala Ala Pro Val Ala His  Leu Leu Ala Ser Pro  Cys Thr Ser
    1130             1135                1140


Arg Pro Met Leu Gln His Pro  Thr Tyr Asn Ile Ser  His Pro Ser
    1145             1150                1155


Gly Ile Val His Gln Val Pro  Val Gly Leu Asn Pro  Arg Leu Leu
    1160             1165                1170


Pro Ser Pro Thr Ile His Gln  Thr Gln Tyr Lys Pro  Ile Phe Pro
    1175             1180                1185


Pro His Ser Tyr Ile Ala Ala  Ser Pro Ala Tyr Thr  Gly Phe Pro
    1190             1195                1200


Leu Ser Pro Thr Lys Leu Ser  Gln Tyr Pro Tyr Met
```

67

          1205   1210   1215

<210>   38
<211>   976
<212>   PRT
<213>   Homo sapiens

<400>   38

Met Arg Gly Ala Arg Gly Ala Trp Asp Phe Leu Cys Val Leu Leu Leu
1   5   10   15

Leu Leu Arg Val Gln Thr Gly Ser Ser Gln Pro Ser Val Ser Pro Gly
              20   25   30

Glu Pro Ser Pro Pro Ser Ile His Pro Gly Lys Ser Asp Leu Ile Val
          35   40   45

Arg Val Gly Asp Glu Ile Arg Leu Leu Cys Thr Asp Pro Gly Phe Val
      50   55   60

Lys Trp Thr Phe Glu Ile Leu Asp Glu Thr Asn Glu Asn Lys Gln Asn
65   70   75   80

Glu Trp Ile Thr Glu Lys Ala Glu Ala Thr Asn Thr Gly Lys Tyr Thr
              85   90   95

Cys Thr Asn Lys His Gly Leu Ser Asn Ser Ile Tyr Val Phe Val Arg
              100   105   110

Asp Pro Ala Lys Leu Phe Leu Val Asp Arg Ser Leu Tyr Gly Lys Glu
          115   120   125

Asp Asn Asp Thr Leu Val Arg Cys Pro Leu Thr Asp Pro Glu Val Thr
      130   135   140

Asn Tyr Ser Leu Lys Gly Cys Gln Gly Lys Pro Leu Pro Lys Asp Leu
145   150   155   160

Arg Phe Ile Pro Asp Pro Lys Ala Gly Ile Met Ile Lys Ser Val Lys
              165   170   175

Arg Ala Tyr His Arg Leu Cys Leu His Cys Ser Val Asp Gln Glu Gly
              180   185   190

Lys Ser Val Leu Ser Glu Lys Phe Ile Leu Lys Val Arg Pro Ala Phe
          195   200   205

```
Lys Ala Val Pro Val Val Ser Val Ser Lys Ala Ser Tyr Leu Leu Arg
    210             215             220
```

```
Glu Gly Glu Glu Phe Thr Val Thr Cys Thr Ile Lys Asp Val Ser Ser
225             230             235             240
```

```
Ser Val Tyr Ser Thr Trp Lys Arg Glu Asn Ser Gln Thr Lys Leu Gln
            245             250             255
```

```
Glu Lys Tyr Asn Ser Trp His His Gly Asp Phe Asn Tyr Glu Arg Gln
            260             265             270
```

```
Ala Thr Leu Thr Ile Ser Ser Ala Arg Val Asn Asp Ser Gly Val Phe
        275             280             285
```

```
Met Cys Tyr Ala Asn Asn Thr Phe Gly Ser Ala Asn Val Thr Thr Thr
    290             295             300
```

```
Leu Glu Val Val Asp Lys Gly Phe Ile Asn Ile Phe Pro Met Ile Asn
305             310             315             320
```

```
Thr Thr Val Phe Val Asn Asp Gly Glu Asn Val Asp Leu Ile Val Glu
            325             330             335
```

```
Tyr Glu Ala Phe Pro Lys Pro Glu His Gln Gln Trp Ile Tyr Met Asn
        340             345             350
```

```
Arg Thr Phe Thr Asp Lys Trp Glu Asp Tyr Pro Lys Ser Glu Asn Glu
        355             360             365
```

```
Ser Asn Ile Arg Tyr Val Ser Glu Leu His Leu Thr Arg Leu Lys Gly
    370             375             380
```

```
Thr Glu Gly Gly Thr Tyr Thr Phe Leu Val Ser Asn Ser Asp Val Asn
385             390             395             400
```

```
Ala Ala Ile Ala Phe Asn Val Tyr Val Asn Thr Lys Pro Glu Ile Leu
            405             410             415
```

```
Thr Tyr Asp Arg Leu Val Asn Gly Met Leu Gln Cys Val Ala Ala Gly
            420             425             430
```

```
Phe Pro Glu Pro Thr Ile Asp Trp Tyr Phe Cys Pro Gly Thr Glu Gln
        435             440             445
```

```
Arg Cys Ser Ala Ser Val Leu Pro Val Asp Val Gln Thr Leu Asn Ser
    450             455             460
```

69

Ser Gly Pro Pro Phe Gly Lys Leu Val Val Gln Ser Ser Ile Asp Ser
465   470   475   480

Ser Ala Phe Lys His Asn Gly Thr Val Glu Cys Lys Ala Tyr Asn Asp
            485   490   495

Val Gly Lys Thr Ser Ala Tyr Phe Asn Phe Ala Phe Lys Gly Asn Asn
        500   505   510

Lys Glu Gln Ile His Pro His Thr Leu Phe Thr Pro Leu Leu Ile Gly
        515   520   525

Phe Val Ile Val Ala Gly Met Met Cys Ile Ile Val Met Ile Leu Thr
    530   535   540

Tyr Lys Tyr Leu Gln Lys Pro Met Tyr Glu Val Gln Trp Lys Val Val
545   550   555   560

Glu Glu Ile Asn Gly Asn Asn Tyr Val Tyr Ile Asp Pro Thr Gln Leu
            565   570   575

Pro Tyr Asp His Lys Trp Glu Phe Pro Arg Asn Arg Leu Ser Phe Gly
        580   585   590

Lys Thr Leu Gly Ala Gly Ala Phe Gly Lys Val Val Glu Ala Thr Ala
        595   600   605

Tyr Gly Leu Ile Lys Ser Asp Ala Ala Met Thr Val Ala Val Lys Met
    610   615   620

Leu Lys Pro Ser Ala His Leu Thr Glu Arg Glu Ala Leu Met Ser Glu
625   630   635   640

Leu Lys Val Leu Ser Tyr Leu Gly Asn His Met Asn Ile Val Asn Leu
            645   650   655

Leu Gly Ala Cys Thr Ile Gly Gly Pro Thr Leu Val Ile Thr Glu Tyr
        660   665   670

Cys Cys Tyr Gly Asp Leu Leu Asn Phe Leu Arg Arg Lys Arg Asp Ser
        675   680   685

Phe Ile Cys Ser Lys Gln Glu Asp His Ala Glu Ala Ala Leu Tyr Lys
    690   695   700

Asn Leu Leu His Ser Lys Glu Ser Ser Cys Ser Asp Ser Thr Asn Glu
705   710   715   720

Tyr Met Asp Met Lys Pro Gly Val Ser Tyr Val Val Pro Thr Lys Ala
                725   730   735

Asp Lys Arg Arg Ser Val Arg Ile Gly Ser Tyr Ile Glu Arg Asp Val
            740   745   750

Thr Pro Ala Ile Met Glu Asp Asp Glu Leu Ala Leu Asp Leu Glu Asp
        755   760   765

Leu Leu Ser Phe Ser Tyr Gln Val Ala Lys Gly Met Ala Phe Leu Ala
    770   775   780

Ser Lys Asn Cys Ile His Arg Asp Leu Ala Ala Arg Asn Ile Leu Leu
785   790   795   800

Thr His Gly Arg Ile Thr Lys Ile Cys Asp Phe Gly Leu Ala Arg Asp
            805   810   815

Ile Lys Asn Asp Ser Asn Tyr Val Val Lys Gly Asn Ala Arg Leu Pro
        820   825   830

Val Lys Trp Met Ala Pro Glu Ser Ile Phe Asn Cys Val Tyr Thr Phe
        835   840   845

Glu Ser Asp Val Trp Ser Tyr Gly Ile Phe Leu Trp Glu Leu Phe Ser
850   855   860

Leu Gly Ser Ser Pro Tyr Pro Gly Met Pro Val Asp Ser Lys Phe Tyr
865   870   875   880

Lys Met Ile Lys Glu Gly Phe Arg Met Leu Ser Pro Glu His Ala Pro
            885   890   895

Ala Glu Met Tyr Asp Ile Met Lys Thr Cys Trp Asp Ala Asp Pro Leu
            900   905   910

Lys Arg Pro Thr Phe Lys Gln Ile Val Gln Leu Ile Glu Lys Gln Ile
            915   920   925

Ser Glu Ser Thr Asn His Ile Tyr Ser Asn Leu Ala Asn Cys Ser Pro
930   935   940

Asn Arg Gln Lys Pro Val Val Asp His Ser Val Arg Ile Asn Ser Val
945   950   955   960

71

Gly Ser Thr Ala Ser Ser Ser Gln Pro Leu Leu Val His Asp Asp Val
              965   970   975

<210> 39
<211> 360
<212> PRT
<213> Homo sapiens

<400> 39

Met Ala Ala Ala Ala Ala Ala Gly Ala Gly Pro Glu Met Val Arg Gly
1   5   10   15

Gln Val Phe Asp Val Gly Pro Arg Tyr Thr Asn Leu Ser Tyr Ile Gly
                20   25   30

Glu Gly Ala Tyr Gly Met Val Cys Ser Ala Tyr Asp Asn Val Asn Lys
            35   40   45

Val Arg Val Ala Ile Lys Lys Ile Ser Pro Phe Glu His Gln Thr Tyr
    50   55   60

Cys Gln Arg Thr Leu Arg Glu Ile Lys Ile Leu Leu Arg Phe Arg His
65   70   75   80

Glu Asn Ile Ile Gly Ile Asn Asp Ile Ile Arg Ala Pro Thr Ile Glu
                85   90   95

Gln Met Lys Asp Val Tyr Ile Val Gln Asp Leu Met Glu Thr Asp Leu
                100   105   110

Tyr Lys Leu Leu Lys Thr Gln His Leu Ser Asn Asp His Ile Cys Tyr
            115   120   125

Phe Leu Tyr Gln Ile Leu Arg Gly Leu Lys Tyr Ile His Ser Ala Asn
            130   135   140

Val Leu His Arg Asp Leu Lys Pro Ser Asn Leu Leu Leu Asn Thr Thr
145   150   155   160

Cys Asp Leu Lys Ile Cys Asp Phe Gly Leu Ala Arg Val Ala Asp Pro
                165   170   175

Asp His Asp His Thr Gly Phe Leu Thr Glu Tyr Val Ala Thr Arg Trp
                180   185   190

Tyr Arg Ala Pro Glu Ile Met Leu Asn Ser Lys Gly Tyr Thr Lys Ser

72

                195   200   205

Ile Asp Ile Trp Ser Val Gly Cys Ile Leu Ala Glu Met Leu Ser Asn
    210   215   220

Arg Pro Ile Phe Pro Gly Lys His Tyr Leu Asp Gln Leu Asn His Ile
225   230   235   240

Leu Gly Ile Leu Gly Ser Pro Ser Gln Glu Asp Leu Asn Cys Ile Ile
                245   250   255

Asn Leu Lys Ala Arg Asn Tyr Leu Leu Ser Leu Pro His Lys Asn Lys
            260   265   270

Val Pro Trp Asn Arg Leu Phe Pro Asn Ala Asp Ser Lys Ala Leu Asp
        275   280   285

Leu Leu Asp Lys Met Leu Thr Phe Asn Pro His Lys Arg Ile Glu Val
    290   295   300

Glu Gln Ala Leu Ala His Pro Tyr Leu Glu Gln Tyr Tyr Asp Pro Ser
305   310   315   320

Asp Glu Pro Ile Ala Glu Ala Pro Phe Lys Phe Asp Met Glu Leu Asp
                325   330   335

Asp Leu Pro Lys Glu Lys Leu Lys Glu Leu Ile Phe Glu Glu Thr Ala
            340   345   350

Arg Phe Gln Pro Gly Tyr Arg Ser
        355   360

<210>   40
<211>   422
<212>   PRT
<213>   Homo sapiens

<400>   40

Met Ser Leu His Phe Leu Tyr Tyr Cys Ser Glu Pro Thr Leu Asp Val
1   5   10   15

Lys Ile Ala Phe Cys Gln Gly Phe Asp Lys Gln Val Asp Val Ser Tyr
            20   25   30

Ile Ala Lys His Tyr Asn Met Ser Lys Ser Lys Val Asp Asn Gln Phe
        35   40   45

Tyr Ser Val Glu Val Gly Asp Ser Thr Phe Thr Val Leu Lys Arg Tyr
    50   55   60

Gln Asn Leu Lys Pro Ile Gly Ser Gly Ala Gln Gly Ile Val Cys Ala
65   70   75   80

Ala Tyr Asp Ala Val Leu Asp Arg Asn Val Ala Ile Lys Lys Leu Ser
            85   90   95

Arg Pro Phe Gln Asn Gln Thr His Ala Lys Arg Ala Tyr Arg Glu Leu
            100   105   110

Val Leu Met Lys Cys Val Asn His Lys Asn Ile Ile Ser Leu Leu Asn
        115   120   125

Val Phe Thr Pro Gln Lys Thr Leu Glu Glu Phe Gln Asp Val Tyr Leu
    130   135   140

Val Met Glu Leu Met Asp Ala Asn Leu Cys Gln Val Ile Gln Met Glu
145   150   155   160

Leu Asp His Glu Arg Met Ser Tyr Leu Leu Tyr Gln Met Leu Cys Gly
            165   170   175

Ile Lys His Leu His Ser Ala Gly Ile Ile His Arg Asp Leu Lys Pro
        180   185   190

Ser Asn Ile Val Val Lys Ser Asp Cys Thr Leu Lys Ile Leu Asp Phe
        195   200   205

Gly Leu Ala Arg Thr Ala Gly Thr Ser Phe Met Met Thr Pro Tyr Val
    210   215   220

Val Thr Arg Tyr Tyr Arg Ala Pro Glu Val Ile Leu Gly Met Gly Tyr
225   230   235   240

Lys Glu Asn Val Asp Ile Trp Ser Val Gly Cys Ile Met Gly Glu Met
            245   250   255

Val Arg His Lys Ile Leu Phe Pro Gly Arg Asp Tyr Ile Asp Gln Trp
            260   265   270

Asn Lys Val Ile Glu Gln Leu Gly Thr Pro Cys Pro Glu Phe Met Lys
        275   280   285

Lys Leu Gln Pro Thr Val Arg Asn Tyr Val Glu Asn Arg Pro Lys Tyr
    290   295   300

```
Ala Gly Leu Thr Phe Pro Lys Leu Phe Pro Asp Ser Leu Phe Pro Ala
305                 310             315                 320


Asp Ser Glu His Asn Lys Leu Lys Ala Ser Gln Ala Arg Asp Leu Leu
                325             330             335


Ser Lys Met Leu Val Ile Asp Pro Ala Lys Arg Ile Ser Val Asp Asp
            340             345             350


Ala Leu Gln His Pro Tyr Ile Asn Val Trp Tyr Asp Pro Ala Glu Val
            355             360             365


Glu Ala Pro Pro Pro Gln Ile Tyr Asp Lys Gln Leu Asp Glu Arg Glu
        370             375             380


His Thr Ile Glu Glu Trp Lys Glu Leu Ile Tyr Lys Glu Val Met Asn
385                 390             395                 400


Ser Glu Glu Lys Thr Lys Asn Gly Val Val Lys Gly Gln Pro Ser Pro
                405             410             415


Ser Ala Gln Val Gln Gln
                420
```

<210> 41
<211> 377
<212> PRT
<213> Homo sapiens

<400> 41

```
Met Ala Leu Ser His Gly Ser Val Leu His Gly Gly Asp Cys Gly Lys
1               5                   10                  15


Phe Asn Asn Ser Lys Gly Lys Gly Asn His Lys Gly Phe Lys Val Ala
                20              25              30


Glu Lys Phe Glu Ser Leu Met Asn Ile His Gly Phe Asp Leu Asp Ser
            35              40              45


Thr Tyr Met Asp Leu Lys Pro Leu Gly Cys Gly Gly Asn Tyr Leu Phe
    50              55              60


Phe Ser Ala Val Asp Asn Asp Cys Asp Lys Arg Val Ala Ile Lys Lys
65              70              75              80


Ile Val Leu Thr Asn Pro Gln Ser Val Lys His Ala Leu Cys Glu Ile
```

```
                    85                      90                      95


        Lys Ile Ile Arg Arg Leu Asp His Asp Asn Ile Val Lys Val Phe Glu
                    100                     105             110


        Ile Pro Gly Pro Ser Gly Ser Gln Leu Thr Asp Asp Val Gly Ser Leu
                    115                     120             125


        Thr Glu Leu Asn Ser Val Tyr Ile Val Gln Glu Tyr Met Lys Thr Asp
                    130             135             140


        Leu Ser Lys Val Leu Glu Gln Gly Pro Leu Leu Glu Glu His Ala Arg
        145             150             155             160


        Leu Phe Met Tyr Gln Leu Leu Arg Gly Leu Lys Tyr Ile His Ser Ala
                    165             170             175


        Asn Val Leu His Arg Asp Leu Lys Pro Thr Asn Leu Phe Ile Asn Thr
                    180             185             190


        Glu Asp Leu Val Leu Lys Ile Gly Asp Phe Gly Leu Ala Arg Ile Met
                    195             200             205


        Asp Pro His Tyr Ser Arg Ala His Glu Leu Glu Gln Met Gln Leu Thr
                    210             215             220


        Leu Glu Ser Ile Pro Val Ala His Glu Glu Asp Arg Gln Glu Leu Leu
        225             230             235             240


        Ser Val Ile Pro Val Tyr Ile Arg Asn His Met Thr Glu Pro His Lys
                    245             250             255


        Pro Leu Thr Gln Leu Leu Pro Gly Ile Ser Arg Glu Ala Leu Asn Phe
                    260             265             270


        Leu Glu Gln Ile Leu Thr Phe Ser Pro Met Asp Trp Leu Ile Ala Glu
                    275             280             285


        Glu Ala Leu Ser His Pro Tyr Met Ser Ile Cys Ser Phe Pro Met Asp
                    290             295             300


        Lys Pro Ile Ser Ser His Pro Phe His Ile Glu Asp Glu Ala His Asn
        305             310             315             320


        Ile Leu Leu Met Asp Glu Thr His Ser His Ile Tyr Asn Trp Glu Arg
                    325             330             335
```

```
Tyr Tyr Asp Cys Gln Phe Ser Glu His Asp Trp Pro Ile His Asn Asn
        340             345             350

Phe Asp Ile Asp Glu Val Gln Leu Asn Pro Arg Ala Leu Ser Asp Val
        355             360             365

Thr Asp Glu Glu Val Gln Val Asp Pro
    370             375
```

<210> 42
<211> 721
<212> PRT
<213> Homo sapiens

<400> 42

```
Met Ala Glu Lys Phe Glu Ser Leu Met Asn Ile His Gly Phe Asp Leu
1               5               10              15

Gly Ser Arg Tyr Met Asp Leu Lys Pro Leu Gly Cys Gly Gly Asn Gly
            20              25              30

Leu Val Phe Ser Ala Val Asp Asn Asp Cys Asp Lys Arg Val Ala Ile
        35              40              45

Lys Lys Ile Val Leu Thr Asp Pro Gln Ser Val Lys His Ala Leu Arg
    50              55              60

Glu Ile Lys Ile Ile Arg Arg Leu Asp His Asp Asn Ile Val Lys Val
65              70              75              80

Phe Glu Ile Leu Gly Pro Ser Gly Ser Gln Leu Thr Asp Asp Val Gly
            85              90              95

Ser Leu Thr Glu Leu Asn Ser Val Tyr Ile Val Gln Glu Tyr Met Glu
            100             105             110

Thr Asp Leu Ala Asn Val Leu Glu Gln Gly Pro Leu Leu Glu Glu His
        115             120             125

Ala Arg Leu Phe Met Tyr Gln Leu Leu Arg Gly Leu Lys Tyr Ile His
    130             135             140

Ser Ala Asn Val Leu His Arg Asp Leu Lys Pro Ala Asn Leu Phe Ile
145             150             155             160

Asn Thr Glu Asp Leu Val Leu Lys Ile Gly Asp Phe Gly Leu Ala Arg
            165             170             175
```

77

```
Ile Met Asp Pro His Tyr Ser His Lys Gly His Leu Ser Glu Gly Leu
            180                 185                 190

Val Thr Lys Trp Tyr Arg Ser Pro Arg Leu Leu Leu Ser Pro Asn Asn
            195                 200                 205

Tyr Thr Lys Ala Ile Asp Met Trp Ala Ala Gly Cys Ile Phe Ala Glu
            210                 215                 220

Met Leu Thr Gly Lys Thr Leu Phe Ala Gly Ala His Glu Leu Glu Gln
225                 230                 235                 240

Met Gln Leu Ile Leu Glu Ser Ile Pro Val Val His Glu Glu Asp Arg
                245                 250                 255

Gln Glu Leu Leu Ser Val Ile Pro Val Tyr Ile Arg Asn Asp Met Thr
            260                 265                 270

Glu Pro His Lys Pro Leu Thr Gln Leu Leu Pro Gly Ile Ser Arg Glu
            275                 280                 285

Ala Leu Asp Phe Leu Glu Gln Ile Leu Thr Phe Ser Pro Met Asp Arg
            290                 295                 300

Leu Thr Ala Glu Glu Ala Leu Ser His Pro Tyr Met Ser Ile Tyr Ser
305                 310                 315                 320

Phe Pro Met Asp Glu Pro Ile Ser Ser His Pro Phe His Ile Glu Asp
                325                 330                 335

Glu Val Asp Asp Ile Leu Leu Met Asp Glu Thr His Ser His Ile Tyr
                340                 345                 350

Asn Trp Glu Arg Tyr His Asp Cys Gln Phe Ser Glu His Asp Trp Pro
            355                 360                 365

Val His Asn Asn Phe Asp Ile Asp Glu Val Gln Leu Asp Pro Arg Ala
            370                 375                 380

Leu Ser Asp Val Thr Asp Glu Glu Glu Val Gln Val Asp Pro Arg Lys
385                 390                 395                 400

Tyr Leu Asp Gly Asp Arg Glu Lys Tyr Leu Glu Asp Pro Ala Phe Asp
                405                 410                 415
```

78

Thr Asn Tyr Ser Thr Glu Pro Cys Trp Gln Tyr Ser Asp His His Glu
        420   425   430

Asn Lys Tyr Cys Asp Leu Glu Cys Ser His Thr Cys Asn Tyr Lys Thr
        435   440   445

Arg Ser Ser Ser Tyr Leu Asp Asn Leu Val Trp Arg Glu Ser Glu Val
    450   455   460

Asn His Tyr Tyr Glu Pro Lys Leu Ile Ile Asp Leu Ser Asn Trp Lys
465   470   475   480

Glu Gln Ser Lys Glu Lys Ser Asp Lys Lys Gly Lys Ser Lys Cys Glu
            485   490   495

Arg Asn Gly Leu Val Lys Ala Gln Ile Ala Leu Glu Glu Ala Ser Gln
            500   505   510

Gln Leu Ala Gly Lys Glu Arg Glu Lys Asn Gln Gly Phe Asp Phe Asp
        515   520   525

Ser Phe Ile Ala Gly Thr Ile Gln Leu Ser Ser Gln His Glu Pro Thr
    530   535   540

Asp Val Val Asp Lys Leu Asn Asp Leu Asn Ser Ser Val Ser Gln Leu
545   550   555   560

Glu Leu Lys Ser Leu Ile Ser Lys Ser Val Ser Gln Glu Lys Gln Glu
            565   570   575

Lys Gly Met Ala Asn Leu Ala Gln Leu Glu Ala Leu Tyr Gln Ser Ser
            580   585   590

Trp Asp Ser Gln Phe Val Ser Gly Gly Glu Asp Cys Phe Phe Ile Asn
        595   600   605

Gln Phe Cys Glu Val Arg Lys Asp Glu Gln Val Glu Lys Glu Asn Thr
    610   615   620

Tyr Thr Ser Tyr Leu Asp Lys Phe Phe Ser Arg Lys Glu Asp Thr Glu
625   630   635   640

Met Leu Glu Thr Glu Pro Val Glu Asp Gly Lys Leu Gly Glu Arg Gly
            645   650   655

His Glu Glu Gly Phe Leu Asn Asn Ser Gly Glu Phe Leu Phe Asn Lys
            660   665   670

79

Gln Leu Glu Ser Ile Gly Ile Pro Gln Phe His Ser Pro Val Gly Ser
        675   680   685

Pro Leu Lys Ser Ile Gln Ala Thr Leu Thr Pro Ser Ala Met Lys Ser
        690   695.   700

Ser Pro Gln Ile Pro His Gln Thr Tyr Ser Ser Ile Leu Lys His Leu
705   710   715   720

Asn

<210>   43
<211>   557
<212>   PRT
<213>   Homo sapiens

<400>   43

Met Ala Glu Lys Gly Asp Cys Ile Ala Ser Val Tyr Gly Tyr Asp Leu
1   5   10   15

Gly Gly Arg Phe Val Asp Phe Gln Pro Leu Gly Phe Gly Val Asn Gly
            20   25   30

Leu Val Leu Ser Ala Val Asp Ser Arg Ala Cys Arg Lys Val Ala Val
            35   40   45

Lys Lys Ile Ala Leu Ser Asp Ala Arg Ser Met Lys His Ala Leu Arg
        50   55   60

Glu Ile Lys Ile Ile Arg Arg Leu Asp His Asp Asn Ile Val Lys Val
65   70   75   80

Tyr Glu Val Leu Gly Pro Lys Gly Thr Asp Leu Gln Gly Glu Leu Phe
            85   90   95

Lys Phe Ser Val Ala Tyr Ile Val Gln Glu Tyr Met Glu Thr Asp Leu
            100.   105   110

Ala Arg Leu Leu Glu Gln Gly Thr Leu Ala Glu Glu His Ala Lys Leu
        115   120   125

Phe Met Tyr Gln Leu Leu Arg Gly Leu Lys Tyr Ile His Ser Ala Asn
        130   135   140

Val Leu His Arg Asp Leu Lys Pro Ala Asn Ile Phe Ile Ser Thr Glu

80

145   150   155   160

Asp Leu Val Leu Lys Ile Gly Asp Phe Gly Leu Ala Arg Ile Val Asp
              165   170   175

Gln His Tyr Ser His Lys Gly Tyr Leu Ser Glu Gly Leu Val Thr Lys
              180   185   190

Trp Tyr Arg Ser Pro Arg Leu Leu Leu Ser Pro Asn Asn Tyr Thr Lys
              195   200   205

Ala Ile Asp Met Trp Ala Ala Gly Cys Ile Leu Ala Glu Met Leu Thr
    210   215   220

Gly Arg Met Leu Phe Ala Gly Ala His Glu Leu Glu Gln Met Gln Leu
225   230   235   240

Ile Leu Glu Thr Ile Pro Val Ile Arg Glu Glu Asp Lys Asp Glu Leu
              245   250   255

Leu Arg Val Met Pro Ser Phe Val Ser Ser Thr Trp Glu Val Lys Arg
              260   265   270

Pro Leu Arg Lys Leu Leu Pro Glu Val Asn Ser Glu Ala Ile Asp Phe
          275   280   285

Leu Glu Lys Ile Leu Thr Phe Asn Pro Met Asp Arg Leu Thr Ala Glu
    290   295   300

Met Gly Leu Gln His Pro Tyr Met Ser Pro Tyr Ser Cys Pro Glu Asp
305   310   315   320

Glu Pro Thr Ser Gln His Pro Phe Arg Ile Glu Asp Glu Ile Asp Asp
              325   330   335

Ile Val Leu Met Ala Ala Asn Gln Ser Gln Leu Ser Asn Trp Asp Thr
              340   345   350

Cys Ser Ser Arg Tyr Pro Val Ser Leu Ser Ser Asp Leu Glu Trp Arg
          355   360   365

Pro Asp Arg Cys Gln Asp Ala Ser Glu Val Gln Arg Asp Pro Arg Gly
    370   375   380

Phe Gly Ala Leu Ala Glu Asp Val Gln Val Asp Pro Arg Lys Asp Ser
385   390   395   400

```
His Ser Ser Ser Glu Arg Phe Leu Glu Gln Ser His Ser Ser Met Glu
            405             410             415

Arg Ala Phe Glu Ala Asp Tyr Gly Arg Ser Cys Asp Tyr Lys Val Gly
            420             425             430

Ser Pro Ser Tyr Leu Asp Lys Leu Leu Trp Arg Asp Asn Lys Pro His
            435             440             445

His Tyr Ser Glu Pro Lys Leu Ile Leu Asp Leu Ser His Trp Lys Gln
    450             455             460

Ala Ala Gly Ala Pro Pro Thr Ala Thr Gly Leu Ala Asp Thr Gly Ala
465             470             475             480

Arg Glu Asp Glu Pro Ala Ser Leu Phe Leu Glu Ile Ala Gln Trp Val
            485             490             495

Lys Ser Thr Gln Gly Ala Gln Ser Thr Pro Ala Arg Pro Pro Thr Thr
            500             505             510

Pro Ser Ala Ala Cys Leu Pro Arg Pro Pro Pro Gly Pro Gly Gly
            515             520             525

Arg Arg Arg Gln Pro Pro Val Arg Pro Gly Arg Val His Leu Pro Arg
    530             535             540

Pro Glu Ala Leu His Gln Ala Arg Gly Pro Ala Gly Gln
545             550             555
```

<210> 44
<211> 841
<212> PRT
<213> Homo sapiens

<400> 44

```
Met Pro Leu Ala Ala Tyr Cys Tyr Leu Arg Val Val Gly Lys Gly Ser
1               5               10              15

Tyr Gly Glu Val Thr Leu Val Lys His Arg Arg Asp Gly Lys Gln Tyr
            20              25              30

Val Ile Lys Lys Leu Asn Leu Arg Asn Ala Ser Ser Arg Glu Arg Arg
        35              40              45

Ala Ala Glu Gln Glu Ala Gln Leu Leu Ser Gln Leu Lys His Pro Asn
    50              55              60
```

```
Ile Val Thr Tyr Lys Glu Ser Trp Glu Gly Gly Asp Gly Leu Leu Tyr
65            70              75                      80

Ile Val Met Gly Phe Cys Glu Gly Gly Asp Leu Tyr Arg Lys Leu Lys
              85              90                  95

Glu Gln Lys Gly Gln Leu Leu Pro Glu Asn Gln Val Val Glu Trp Phe
            100              105              110

Val Gln Ile Ala Met Ala Leu Gln Tyr Leu His Glu Lys His Ile Leu
        115              120              125

His Arg Asp Leu Lys Thr Gln Asn Val Phe Leu Thr Arg Thr Asn Ile
    130              135              140

Ile Lys Val Gly Asp Leu Gly Ile Ala Arg Val Leu Glu Asn His Cys
145              150              155              160

Asp Met Ala Ser Thr Leu Ile Gly Thr Pro Tyr Tyr Met Ser Pro Glu
              165              170              175

Leu Phe Ser Asn Lys Pro Tyr Asn Tyr Lys Ser Asp Val Trp Ala Leu
            180              185              190

Gly Cys Cys Val Tyr Glu Met Ala Thr Leu Lys His Ala Phe Asn Ala
        195              200              205

Lys Asp Met Asn Ser Leu Val Tyr Arg Ile Ile Glu Gly Lys Leu Pro
    210              215              220

Ala Met Pro Arg Asp Tyr Ser Pro Glu Leu Ala Glu Leu Ile Arg Thr
225              230              235              240

Met Leu Ser Lys Arg Pro Glu Glu Arg Pro Ser Val Arg Ser Ile Leu
            245              250              255

Arg Gln Pro Tyr Ile Lys Arg Gln Ile Ser Phe Phe Leu Glu Ala Thr
            260              265              270

Lys Ile Lys Thr Ser Lys Asn Asn Ile Lys Asn Gly Asp Ser Gln Ser
        275              280              285

Lys Pro Phe Ala Thr Val Val Ser Gly Glu Ala Glu Ser Asn His Glu
    290              295              300
```

Val Ile His Pro Gln Pro Leu Ser Ser Glu Gly Ser Gln Thr Tyr Ile
305   310   315   320

Met Gly Glu Gly Lys Cys Leu Ser Gln Glu Lys Pro Arg Ala Ser Gly
                325   330   335

Leu Leu Lys Ser Pro Ala Ser Leu Lys Ala His Thr Cys Lys Gln Asp
            340   345   350

Leu Ser Asn Thr Thr Glu Leu Ala Thr Ile Ser Ser Val Asn Ile Asp
            355   360   365

Ile Leu Pro Ala Lys Gly Arg Asp Ser Val Ser Asp Gly Phe Val Gln
        370   375   380

Glu Asn Gln Pro Arg Tyr Leu Asp Ala Ser Asn Glu Leu Gly Gly Ile
385   390   395   400

Cys Ser Ile Ser Gln Val Glu Glu Glu Met Leu Gln Asp Asn Thr Lys
            405   410   415

Ser Ser Ala Gln Pro Glu Asn Leu Ile Pro Met Trp Ser Ser Asp Ile
            420   425   430

Val Thr Gly Glu Lys Asn Glu Pro Val Lys Pro Leu Gln Pro Leu Ile
        435   440   445

Lys Glu Gln Lys Pro Lys Asp Gln Ser Leu Ala Leu Ser Pro Lys Leu
    450   455   460

Glu Cys Ser Gly Thr Ile Leu Ala His Ser Asn Leu Arg Leu Leu Gly
465   470   475   480

Ser Ser Asp Ser Pro Ala Ser Ala Ser Arg Val Ala Gly Ile Thr Gly
            485   490   495

Val Cys His His Ala Gln Asp Gln Val Ala Gly Glu Cys Ile Ile Glu
            500   505   510

Lys Gln Gly Arg Ile His Pro Asp Leu Gln Pro His Asn Ser Gly Ser
    515   520   525

Glu Pro Ser Leu Ser Arg Gln Arg Arg Gln Lys Arg Arg Glu Gln Thr
    530   535   540

Glu His Arg Gly Glu Lys Arg Gln Val Arg Arg Asp Leu Phe Ala Phe
545   550   555   560

84

```
Gln Glu Ser Pro Pro Arg Phe Leu Pro Ser His Pro Ile Val Gly Lys
            565             570             575


Val Asp Val Thr Ser Thr Gln Lys Glu Ala Glu Asn Gln Arg Arg Val
            580             585             590


Val Thr Gly Ser Val Ser Ser Ser Arg Ser Ser Glu Met Ser Ser Ser
            595             600             605


Lys Asp Arg Pro Leu Ser Ala Arg Glu Arg Arg Leu Lys Gln Ser
610             615             620


Gln Glu Glu Met Ser Ser Ser Gly Pro Ser Val Arg Lys Ala Ser Leu
625             630             635             640


Ser Val Ala Gly Pro Gly Lys Pro Gln Glu Glu Asp Gln Pro Leu Pro
            645             650             655


Ala Arg Arg Leu Ser Ser Asp Cys Ser Val Thr Gln Glu Arg Lys Gln
            660             665             670


Ile His Cys Leu Ser Glu Asp Glu Leu Ser Ser Ser Thr Ser Ser Thr
            675             680             685


Asp Lys Ser Asp Gly Asp Tyr Gly Glu Gly Lys Gly Gln Thr Asn Glu
            690             695             700


Ile Asn Ala Leu Val Gln Leu Met Thr Gln Thr Leu Lys Leu Asp Ser
705             710             715             720


Lys Glu Ser Cys Glu Asp Val Pro Val Ala Asn Pro Val Ser Glu Phe
            725             730             735


Lys Leu His Arg Lys Tyr Arg Asp Thr Leu Ile Leu His Gly Lys Val
            740             745             750


Ala Glu Glu Ala Glu Glu Ile His Phe Lys Glu Leu Pro Ser Ala Ile
            755             760             765


Met Pro Gly Ser Glu Lys Ile Arg Arg Leu Val Glu Val Leu Arg Thr
770             775             780


Asp Val Ile Arg Gly Leu Gly Val Gln Leu Leu Glu Gln Val Tyr Asp
785             790             795             800
```

```
Leu Leu Glu Glu Glu Asp Glu Phe Asp Arg Glu Val Arg Leu Arg Glu
            805             810             815

His Met Gly Glu Lys Tyr Thr Thr Tyr Ser Val Lys Ala Arg Gln Leu
            820             825             830

Lys Phe Phe Glu Glu Asn Met Asn Phe
            835             840
```

<210> 45
<211> 822
<212> PRT
<213> Homo sapiens

<400> 45

```
Met Ser Ser Trp Ile Arg Trp His Gly Pro Ala Met Ala Arg Leu Trp
1               5               10              15

Gly Phe Cys Trp Leu Val Val Gly Phe Trp Arg Ala Ala Phe Ala Cys
            20              25              30

Pro Thr Ser Cys Lys Cys Ser Ala Ser Arg Ile Trp Cys Ser Asp Pro
            35              40              45

Ser Pro Gly Ile Val Ala Phe Pro Arg Leu Glu Pro Asn Ser Val Asp
        50              55              60

Pro Glu Asn Ile Thr Glu Ile Phe Ile Ala Asn Gln Lys Arg Leu Glu
65              70              75              80

Ile Ile Asn Glu Asp Asp Val Glu Ala Tyr Val Gly Leu Arg Asn Leu
            85              90              95

Thr Ile Val Asp Ser Gly Leu Lys Phe Val Ala His Lys Ala Phe Leu
            100             105             110

Lys Asn Ser Asn Leu Gln His Ile Asn Phe Thr Arg Asn Lys Leu Thr
            115             120             125

Ser Leu Ser Arg Lys His Phe Arg His Leu Asp Leu Ser Glu Leu Ile
        130             135             140

Leu Val Gly Asn Pro Phe Thr Cys Ser Cys Asp Ile Met Trp Ile Lys
145             150             155             160

Thr Leu Gln Glu Ala Lys Ser Ser Pro Asp Thr Gln Asp Leu Tyr Cys
                165             170             175
```

```
Leu Asn Glu Ser Ser Lys Asn Ile Pro Leu Ala Asn Leu Gln Ile Pro
         180             185             190

Asn Cys Gly Leu Pro Ser Ala Asn Leu Ala Ala Pro Asn Leu Thr Val
         195             200             205

Glu Glu Gly Lys Ser Ile Thr Leu Ser Cys Ser Val Ala Gly Asp Pro
         210             215             220

Val Pro Asn Met Tyr Trp Asp Val Gly Asn Leu Val Ser Lys His Met
225             230             235             240

Asn Glu Thr Ser His Thr Gln Gly Ser Leu Arg Ile Thr Asn Ile Ser
             245             250             255

Ser Asp Asp Ser Gly Lys Gln Ile Ser Cys Val Ala Glu Asn Leu Val
         260             265             270

Gly Glu Asp Gln Asp Ser Val Asn Leu Thr Val His Phe Ala Pro Thr
         275             280             285

Ile Thr Phe Leu Glu Ser Pro Thr Ser Asp His His Trp Cys Ile Pro
    290             295             300

Phe Thr Val Lys Gly Asn Pro Lys Pro Ala Leu Gln Trp Phe Tyr Asn
305             310             315             320

Gly Ala Ile Leu Asn Glu Ser Lys Tyr Ile Cys Thr Lys Ile His Val
             325             330             335

Thr Asn His Thr Glu Tyr His Gly Cys Leu Gln Leu Asp Asn Pro Thr
             340             345             350

His Met Asn Asn Gly Asp Tyr Thr Leu Ile Ala Lys Asn Glu Tyr Gly
         355             360             365

Lys Asp Glu Lys Gln Ile Ser Ala His Phe Met Gly Trp Pro Gly Ile
         370             375             380

Asp Asp Gly Ala Asn Pro Asn Tyr Pro Asp Val Ile Tyr Glu Asp Tyr
385             390             395             400

Gly Thr Ala Ala Asn Asp Ile Gly Asp Thr Thr Asn Arg Ser Asn Glu
             405             410             415

Ile Pro Ser Thr Asp Val Thr Asp Lys Thr Gly Arg Glu His Leu Ser
```

```
                420                    425                    430


    Val Tyr Ala Val Val Val Ile Ala Ser Val Val Gly Phe Cys Leu Leu
            435                 440                 445


    Val Met Leu Phe Leu Leu Lys Leu Ala Arg His Ser Lys Phe Gly Met
        450                 455                 460


    Lys Gly Pro Ala Ser Val Ile Ser Asn Asp Asp Ser Ala Ser Pro
    465                 470                 475                 480


    Leu His His Ile Ser Asn Gly Ser Asn Thr Pro Ser Ser Ser Glu Gly
                    485                 490                 495


    Gly Pro Asp Ala Val Ile Ile Gly Met Thr Lys Ile Pro Val Ile Glu
                500                 505                 510


    Asn Pro Gln Tyr Phe Gly Ile Thr Asn Ser Gln Leu Lys Pro Asp Thr
            515                 520                 525


    Phe Val Gln His Ile Lys Arg His Asn Ile Val Leu Lys Arg Glu Leu
        530                 535                 540


    Gly Glu Gly Ala Phe Gly Lys Val Phe Leu Ala Glu Cys Tyr Asn Leu
    545                 550                 555                 560


    Cys Pro Glu Gln Asp Lys Ile Leu Val Ala Val Lys Thr Leu Lys Asp
                565                 570                 575


    Ala Ser Asp Asn Ala Arg Lys Asp Phe His Arg Glu Ala Glu Leu Leu
                580                 585                 590


    Thr Asn Leu Gln His Glu His Ile Val Lys Phe Tyr Gly Val Cys Val
            595                 600                 605


    Glu Gly Asp Pro Leu Ile Met Val Phe Glu Tyr Met Lys His Gly Asp
        610                 615                 620


    Leu Asn Lys Phe Leu Arg Ala His Gly Pro Asp Ala Val Leu Met Ala
    625                 630                 635                 640


    Glu Gly Asn Pro Pro Thr Glu Leu Thr Gln Ser Gln Met Leu His Ile
                645                 650                 655


    Ala Gln Gln Ile Ala Ala Gly Met Val Tyr Leu Ala Ser Gln His Phe
                660                 665                 670
```

Val His Arg Asp Leu Ala Thr Arg Asn Cys Leu Val Gly Glu Asn Leu
        675   680   685

Leu Val Lys Ile Gly Asp Phe Gly Met Ser Arg Asp Val Tyr Ser Thr
        690   695   700

Asp Tyr Tyr Arg Val Gly Gly His Thr Met Leu Pro Ile Arg Trp Met
705   710   715   720

Pro Pro Glu Ser Ile Met Tyr Arg Lys Phe Thr Thr Glu Ser Asp Val
            725   730   735

Trp Ser Leu Gly Val Val Leu Trp Glu Ile Phe Thr Tyr Gly Lys Gln
            740   745   750

Pro Trp Tyr Gln Leu Ser Asn Asn Glu Val Ile Glu Cys Ile Thr Gln
        755   760   765

Gly Arg Val Leu Gln Arg Pro Arg Thr Cys Pro Gln Glu Val Tyr Glu
    770   775   780

Leu Met Leu Gly Cys Trp Gln Arg Glu Pro His Met Arg Lys Asn Ile
785   790   795   800

Lys Gly Ile His Thr Leu Leu Gln Asn Leu Ala Lys Ala Ser Pro Val
            805   810   815

Tyr Leu Asp Ile Leu Gly
            820

<210> 46
<211> 411
<212> PRT
<213> Homo sapiens

<400> 46

Met Lys Ala Ala Arg Phe Val Leu Arg Ser Ala Gly Ser Leu Asn Gly
1   5   10   15

Ala Gly Leu Val Pro Arg Glu Val Glu His Phe Ser Arg Tyr Ser Pro
            20   25   30

Ser Pro Leu Ser Met Lys Gln Leu Leu Asp Phe Gly Ser Glu Asn Ala
        35   40   45

Cys Glu Arg Thr Ser Phe Ala Phe Leu Arg Gln Glu Leu Pro Val Arg
    50   55   60

```
Leu Ala Asn Ile Leu Lys Glu Ile Asp Ile Leu Pro Thr Gln Leu Val
65              70              75              80


Asn Thr Ser Ser Val Gln Leu Val Lys Ser Trp Tyr Ile Gln Ser Leu
            85              90              95


Met Asp Leu Val Glu Phe His Glu Lys Ser Pro Asp Asp Gln Lys Ala
        100             105             110


Leu Ser Asp Phe Val Asp Thr Leu Ile Lys Val Arg Asn Arg His His
        115             120             125


Asn Val Val Pro Thr Met Ala Gln Gly Ile Ile Glu Tyr Lys Asp Ala
    130             135             140


Cys Thr Val Asp Pro Val Thr Asn Gln Asn Leu Gln Tyr Phe Leu Asp
145             150             155             160


Arg Phe Tyr Met Asn Arg Ile Ser Thr Arg Met Leu Met Asn Gln His
            165             170             175


Ile Leu Ile Phe Ser Asp Ser Gln Thr Gly Asn Pro Ser His Ile Gly
        180             185             190


Ser Ile Asp Pro Asn Cys Asp Val Val Ala Val Val Gln Asp Ala Phe
        195             200             205


Glu Cys Ser Arg Met Leu Cys Asp Gln Tyr Tyr Leu Ser Ser Pro Glu
    210             215             220


Leu Lys Leu Thr Gln Val Asn Gly Lys Phe Pro Asp Gln Pro Ile His
225             230             235             240


Ile Val Tyr Val Pro Ser His Leu His His Met Leu Phe Glu Leu Phe
            245             250             255


Lys Asn Ala Met Arg Ala Thr Val Glu His Gln Glu Asn Gln Pro Ser
        260             265             270


Leu Thr Pro Ile Glu Val Ile Val Val Leu Gly Lys Glu Asp Leu Thr
        275             280             285


Ile Lys Ile Ser Asp Arg Gly Gly Gly Val Pro Leu Arg Ile Ile Asp
    290             295             300
```

90

Arg Leu Phe Ser Tyr Thr Tyr Ser Thr Ala Pro Thr Pro Val Met Asp
305   310   315   320

Asn Ser Arg Asn Ala Pro Leu Ala Gly Phe Gly Tyr Gly Leu Pro Ile
                325   330   335

Ser Arg Leu Tyr Ala Lys Tyr Phe Gln Gly Asp Leu Asn Leu Tyr Ser
                340   345   350

Leu Ser Gly Tyr Gly Thr Asp Ala Ile Ile Tyr Leu Lys Ala Leu Ser
                355   360   365

Ser Glu Ser Ile Glu Lys Leu Pro Val Phe Asn Lys Ser Ala Phe Lys
    370   375   380

His Tyr Gln Met Ser Ser Glu Ala Asp Asp Trp Cys Ile Pro Ser Arg
385   390   395   400

Glu Pro Lys Asn Leu Ala Lys Glu Val Ala Met
                405   410

<210> 47
<211> 499
<212> PRT
<213> Homo sapiens

<400> 47

Met Leu Glu Arg Pro Pro Ala Leu Ala Met Pro Met Pro Thr Glu Gly
1   5   10   15

Thr Pro Pro Pro Leu Ser Gly Thr Pro Ile Pro Val Pro Ala Tyr Phe
                20   25   30

Arg His Ala Glu Pro Gly Phe Ser Leu Lys Arg Pro Arg Gly Leu Ser
        35   40   45

Arg Ser Leu Pro Pro Pro Pro Ala Lys Gly Ser Ile Pro Ile Ser
    50   55   60

Arg Leu Phe Pro Pro Arg Thr Pro Gly Trp His Gln Leu Gln Pro Arg
65   70   75   80

Arg Val Ser Phe Arg Gly Glu Ala Ser Glu Thr Leu Gln Ser Pro Gly
                85   90   95

Tyr Asp Pro Ser Arg Pro Glu Ser Phe Phe Gln Gln Ser Phe Gln Arg
                100   105   110

Leu Ser Arg Leu Gly His Gly Ser Tyr Gly Glu Val Phe Lys Val Arg
        115   120   125

Ser Lys Glu Asp Gly Arg Leu Tyr Ala Val Lys Arg Ser Met Ser Pro
        130   135   140

Phe Arg Gly Pro Lys Asp Arg Ala Arg Lys Leu Ala Glu Val Gly Ser
145   150   155   160

His Glu Lys Val Gly Gln His Pro Cys Cys Val Arg Leu Glu Gln Ala
                165   170   175

Trp Glu Glu Gly Gly Ile Leu Tyr Leu Gln Thr Glu Leu Cys Gly Pro
                180   185   190

Ser Leu Gln Gln His Cys Glu Ala Trp Gly Ala Ser Leu Pro Glu Ala
        195   200   205

Gln Val Trp Gly Tyr Leu Arg Asp Thr Leu Leu Ala Leu Ala His Leu
        210   215   220

His Ser Gln Gly Leu Val His Leu Asp Val Lys Pro Ala Asn Ile Phe
225   230   235   240

Leu Gly Pro Arg Gly Arg Cys Lys Leu Gly Asp Phe Gly Leu Leu Val
                245   250   255

Glu Leu Gly Thr Ala Gly Ala Gly Glu Val Gln Glu Gly Asp Pro Arg
                260   265   270

Tyr Met Ala Pro Glu Leu Leu Gln Gly Ser Tyr Gly Thr Ala Ala Asp
        275   280   285

Val Phe Ser Leu Gly Leu Thr Ile Leu Glu Val Ala Cys Asn Met Glu
        290   295   300

Leu Pro His Gly Gly Glu Gly Trp Gln Gln Leu Arg Gln Gly Tyr Leu
305   310   315   320

Pro Pro Glu Phe Thr Ala Gly Leu Ser Ser Glu Leu Arg Ser Val Leu
                325   330   335

Val Met Met Leu Glu Pro Asp Pro Lys Leu Arg Ala Thr Ala Glu Ala
                340   345   350

Leu Leu Ala Leu Pro Val Leu Arg Gln Pro Arg Ala Trp Gly Val Leu

92

```
            355                      360                      365


Trp Cys Met Ala Ala Glu Ala Leu Ser Arg Gly Trp Ala Leu Trp Gln
    370                  375                  380

Ala Leu Leu Ala Leu Leu Cys Trp Leu Trp His Gly Leu Ala His Pro
385                  390                  395                  400

Ala Ser Trp Leu Gln Pro Leu Gly Pro Pro Ala Thr Pro Pro Gly Ser
                405                  410                  415

Pro Pro Cys Ser Leu Leu Leu Asp Ser Ser Leu Ser Ser Asn Trp Asp
            420                  425                  430

Asp Asp Ser Leu Gly Pro Ser Leu Ser Pro Glu Ala Val Leu Ala Arg
            435                  440                  445

Thr Val Gly Ser Thr Ser Thr Pro Arg Ser Arg Cys Thr Pro Arg Asp
    450                  455                  460

Ala Leu Asp Leu Ser Asp Ile Asn Ser Glu Pro Pro Arg Gly Ser Phe
465                  470                  475                  480

Pro Ser Phe Glu Pro Arg Asn Leu Leu Ser Leu Phe Glu Asp Thr Leu
                485                  490                  495

Asp Pro Thr
```

```
<210>   48
<211>   351
<212>   PRT
<213>   Homo sapiens

<400>   48

Met Gly Asn Ala Ala Thr Ala Lys Lys Gly Ser Glu Val Glu Ser Val
1                   5                   10                  15

Lys Glu Phe Leu Ala Lys Ala Lys Glu Asp Phe Leu Lys Lys Trp Glu
                20                  25                  30

Asn Pro Thr Gln Asn Asn Ala Gly Leu Glu Asp Phe Glu Arg Lys Lys
            35                  40                  45

Thr Leu Gly Thr Gly Ser Phe Gly Arg Val Met Leu Val Lys His Lys
    50                  55                  60
```

```
Ala Thr Glu Gln Tyr Tyr Ala Met Lys Ile Leu Asp Lys Gln Lys Val
65              70              75                  80

Val Lys Leu Lys Gln Ile Glu His Thr Leu Asn Glu Lys Arg Ile Leu
            85              90                  95

Gln Ala Val Asn Phe Pro Phe Leu Val Arg Leu Glu Tyr Ala Phe Lys
            100             105             110

Asp Asn Ser Asn Leu Tyr Met Val Met Glu Tyr Val Pro Gly Gly Glu
        115             120             125

Met Phe Ser His Leu Arg Arg Ile Gly Arg Phe Ser Glu Pro His Ala
        130             135             140

Arg Phe Tyr Ala Ala Gln Ile Val Leu Thr Phe Glu Tyr Leu His Ser
145             150             155             160

Leu Asp Leu Ile Tyr Arg Asp Leu Lys Pro Glu Asn Leu Leu Ile Asp
                165             170             175

His Gln Gly Tyr Ile Gln Val Thr Asp Phe Gly Phe Ala Lys Arg Val
            180             185             190

Lys Gly Arg Thr Trp Thr Leu Cys Gly Thr Pro Glu Tyr Leu Ala Pro
        195             200             205

Glu Ile Ile Leu Ser Lys Gly Tyr Asn Lys Ala Val Asp Trp Trp Ala
    210             215             220

Leu Gly Val Leu Ile Tyr Glu Met Ala Ala Gly Tyr Pro Pro Phe Phe
225             230             235             240

Ala Asp Gln Pro Ile Gln Ile Tyr Glu Lys Ile Val Ser Gly Lys Val
            245             250             255

Arg Phe Pro Ser His Phe Ser Ser Asp Leu Lys Asp Leu Leu Arg Asn
        260             265             270

Leu Leu Gln Val Asp Leu Thr Lys Arg Phe Gly Asn Leu Lys Asn Gly
        275             280             285

Val Ser Asp Ile Lys Thr His Lys Trp Phe Ala Thr Thr Asp Trp Ile
    290             295             300

Ala Ile Tyr Gln Arg Lys Val Glu Ala Pro Phe Ile Pro Lys Phe Arg
305             310             315             320
```

Gly Ser Gly Asp Thr Ser Asn Phe Asp Asp Tyr Glu Glu Glu Asp Ile
            325   330   335

Arg Val Ser Ile Thr Glu Lys Cys Ala Lys Glu Phe Gly Glu Phe
            340   345   350

<210> 49
<211> 351
<212> PRT
<213> Homo sapiens

<400> 49

Met Gly Asn Ala Ala Ala Ala Lys Lys Gly Ser Glu Gln Glu Ser Val
1   5   10   15

Lys Glu Phe Leu Ala Lys Ala Lys Glu Asp Phe Leu Lys Lys Trp Glu
            20   25   30

Ser Pro Ala Gln Asn Thr Ala His Leu Asp Gln Phe Glu Arg Ile Lys
            35   40   45

Thr Leu Gly Thr Gly Ser Phe Gly Arg Val Met Leu Val Lys His Lys
    50   55   60

Glu Thr Gly Asn His Tyr Ala Met Lys Ile Leu Asp Lys Gln Lys Val
65   70   75   80

Val Lys Leu Lys Gln Ile Glu His Thr Leu Asn Glu Lys Arg Ile Leu
                85   90   95

Gln Ala Val Asn Phe Pro Phe Leu Val Lys Leu Glu Phe Ser Phe Lys
            100   105   110

Asp Asn Ser Asn Leu Tyr Met Val Met Glu Tyr Val Pro Gly Gly Glu
            115   120   125

Met Phe Ser His Leu Arg Arg Ile Gly Arg Phe Ser Glu Pro His Ala
    130   135   140

Arg Phe Tyr Ala Ala Gln Ile Val Leu Thr Phe Glu Tyr Leu His Ser
145   150   155   160

Leu Asp Leu Ile Tyr Arg Asp Leu Lys Pro Glu Asn Leu Leu Ile Asp
                165   170   175

Gln Gln Gly Tyr Ile Gln Val Thr Asp Phe Gly Phe Ala Lys Arg Val

95

                        180   185   190

    Lys Gly Arg Thr Trp Thr Leu Cys Gly Thr Pro Glu Tyr Leu Ala Pro
            195   200   205

    Glu Ile Ile Leu Ser Lys Gly Tyr Asn Lys Ala Val Asp Trp Trp Ala
            210   215   220

    Leu Gly Val Leu Ile Tyr Glu Met Ala Ala Gly Tyr Pro Pro Phe Phe
    225   230   235   240

    Ala Asp Gln Pro Ile Gln Ile Tyr Glu Lys Ile Val Ser Gly Lys Val
                245   250   255

    Arg Phe Pro Ser His Phe Ser Ser Asp Leu Lys Asp Leu Leu Arg Asn
                260   265   270

    Leu Leu Gln Val Asp Leu Thr Lys Arg Phe Gly Asn Leu Lys Asn Gly
                275   280   285

    Val Asn Asp Ile Lys Asn His Lys Trp Phe Ala Thr Thr Asp Trp Ile
            290   295   300

    Ala Ile Tyr Gln Arg Lys Val Glu Ala Pro Phe Ile Pro Lys Phe Lys
    305   310   315   320

    Gly Pro Gly Asp Thr Ser Asn Phe Asp Asp Tyr Glu Glu Glu Glu Ile
                325   330   335

    Arg Val Ser Ile Asn Glu Lys Cys Gly Lys Glu Phe Ser Glu Phe
                340   345   350

    <210> 50
    <211> 672
    <212> PRT
    <213> Homo sapiens

    <400> 50

    Met Ala Asp Val Phe Pro Gly Asn Asp Ser Thr Ala Ser Gln Asp Val
    1   5   10   15

    Ala Asn Arg Phe Ala Arg Lys Gly Ala Leu Arg Gln Lys Asn Val His
                20   25   30

    Glu Val Lys Asp His Lys Phe Ile Ala Arg Phe Phe Lys Gln Pro Thr
            35   40   45

```
Phe Cys Ser His Cys Thr Asp Phe Ile Trp Gly Phe Gly Lys Gln Gly
    50                  55              60

Phe Gln Cys Gln Val Cys Cys Phe Val Val His Lys Arg Cys His Glu
65                  70              75                  80

Phe Val Thr Phe Ser Cys Pro Gly Ala Asp Lys Gly Pro Asp Thr Asp
                85              90                  95

Asp Pro Arg Ser Lys His Lys Phe Lys Ile His Thr Tyr Gly Ser Pro
            100             105             110

Thr Phe Cys Asp His Cys Gly Ser Leu Leu Tyr Gly Leu Ile His Gln
            115             120             125

Gly Met Lys Cys Asp Thr Cys Asp Met Asn Val His Lys Gln Cys Val
    130             135             140

Ile Asn Val Pro Ser Leu Cys Gly Met Asp His Thr Glu Lys Arg Gly
145             150             155             160

Arg Ile Tyr Leu Lys Ala Glu Val Ala Asp Glu Lys Leu His Val Thr
            165             170             175

Val Arg Asp Ala Lys Asn Leu Ile Pro Met Asp Pro Asn Gly Leu Ser
            180             185             190

Asp Pro Tyr Val Lys Leu Lys Leu Ile Pro Asp Pro Lys Asn Glu Ser
        195             200             205

Lys Gln Lys Thr Lys Thr Ile Arg Ser Thr Leu Asn Pro Gln Trp Asn
    210             215             220

Glu Ser Phe Thr Phe Lys Leu Lys Pro Ser Asp Lys Asp Arg Arg Leu
225             230             235             240

Ser Val Glu Ile Trp Asp Trp Asp Arg Thr Thr Arg Asn Asp Phe Met
            245             250             255

Gly Ser Leu Ser Phe Gly Val Ser Glu Leu Met Lys Met Pro Ala Ser
            260             265             270

Gly Trp Tyr Lys Leu Leu Asn Gln Glu Glu Gly Glu Tyr Tyr Asn Val
    275             280             285

Pro Ile Pro Glu Gly Asp Glu Glu Gly Asn Met Glu Leu Arg Gln Lys
    290             295             300
```

97

```
Phe Glu Lys Ala Lys Leu Gly Pro Ala Gly Asn Lys Val Ile Ser Pro
305             310             315             320

Ser Glu Asp Arg Lys Gln Pro Ser Asn Asn Leu Asp Arg Val Lys Leu
            325             330             335

Thr Asp Phe Asn Phe Leu Met Val Leu Gly Lys Gly Ser Phe Gly Lys
            340             345             350

Val Met Leu Ala Asp Arg Lys Gly Thr Glu Glu Leu Tyr Ala Ile Lys
            355             360             365

Ile Leu Lys Lys Asp Val Val Ile Gln Asp Asp Val Glu Cys Thr
            370             375             380

Met Val Glu Lys Arg Val Leu Ala Leu Leu Asp Lys Pro Pro Phe Leu
385             390             395             400

Thr Gln Leu His Ser Cys Phe Gln Thr Val Asp Arg Leu Tyr Phe Val
            405             410             415

Met Glu Tyr Val Asn Gly Gly Asp Leu Met Tyr His Ile Gln Gln Val
            420             425             430

Gly Lys Phe Lys Glu Pro Gln Ala Val Phe Tyr Ala Ala Glu Ile Ser
            435             440             445

Ile Gly Leu Phe Phe Leu His Lys Arg Gly Ile Ile Tyr Arg Asp Leu
    450             455             460

Lys Leu Asp Asn Val Met Leu Asp Ser Glu Gly His Ile Lys Ile Ala
465             470             475             480

Asp Phe Gly Met Cys Lys Glu His Met Met Asp Gly Val Thr Thr Arg
                485             490             495

Thr Phe Cys Gly Thr Pro Asp Tyr Ile Ala Pro Glu Ile Ile Ala Tyr
            500             505             510

Gln Pro Tyr Gly Lys Ser Val Asp Trp Trp Ala Tyr Gly Val Leu Leu
            515             520             525

Tyr Glu Met Leu Ala Gly Gln Pro Pro Phe Asp Gly Glu Asp Glu Asp
    530             535             540
```

```
Glu Leu Phe Gln Ser Ile Met Glu His Asn Val Ser Tyr Pro Lys Ser
545                 550             555                 560


Leu Ser Lys Glu Ala Val Ser Ile Cys Lys Gly Leu Met Thr Lys His
                565             570                 575


Pro Ala Lys Arg Leu Gly Cys Gly Pro Glu Gly Glu Arg Asp Val Arg
            580             585             590


Glu His Ala Phe Phe Arg Arg Ile Asp Trp Glu Lys Leu Glu Asn Arg
        595             600             605


Glu Ile Gln Pro Pro Phe Lys Pro Lys Val Cys Gly Lys Gly Ala Glu
    610             615             620


Asn Phe Asp Lys Phe Phe Thr Arg Gly Gln Pro Val Leu Thr Pro Pro
625             630             635             640


Asp Gln Leu Val Ile Ala Asn Ile Asp Gln Ser Asp Phe Glu Gly Phe
            645             650             655


Ser Tyr Val Asn Pro Gln Phe Val His Pro Ile Leu Gln Ser Ala Val
            660             665             670
```

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<210>   51
<211>   676
<212>   PRT
<213>   Homo sapiens

<400>   51
```

```
Met Ala Pro Phe Leu Arg Ile Ala Phe Asn Ser Tyr Glu Leu Gly Ser
1               5               10                  15


Leu Gln Ala Glu Asp Glu Ala Asn Gln Pro Phe Cys Ala Val Lys Met
                20              25              30


Lys Glu Ala Leu Ser Thr Glu Arg Gly Lys Thr Leu Val Gln Lys Lys
            35              40              45


Pro Thr Met Tyr Pro Glu Trp Lys Ser Thr Phe Asp Ala His Ile Tyr
    50              55              60


Glu Gly Arg Val Ile Gln Ile Val Leu Met Arg Ala Ala Glu Glu Pro
65              70              75              80


Val Ser Glu Val Thr Val Gly Val Ser Val Leu Ala Glu Arg Cys Lys
                85              90                  95
```

Lys Asn Asn Gly Lys Ala Glu Phe Trp Leu Asp Leu Gln Pro Gln Ala
            100   105   110

Lys Val Leu Met Ser Val Gln Tyr Phe Leu Glu Asp Val Asp Cys Lys
            115   120   125

Gln Ser Met Arg Ser Glu Asp Glu Ala Lys Phe Pro Thr Met Asn Arg
            130   135   140

Arg Gly Ala Ile Lys Gln Ala Lys Ile His Tyr Ile Lys Asn His Glu
145   150   155   160

Phe Ile Ala Thr Phe Phe Gly Gln Pro Thr Phe Cys Ser Val Cys Lys
                165   170   175

Asp Phe Val Trp Gly Leu Asn Lys Gln Gly Tyr Lys Cys Arg Gln Cys
                180   185   190

Asn Ala Ala Ile His Lys Lys Cys Ile Asp Lys Ile Ile Gly Arg Cys
            195   200   205

Thr Gly Thr Ala Ala Asn Ser Arg Asp Thr Ile Phe Gln Lys Glu Arg
    210   215   220

Phe Asn Ile Asp Met Pro His Arg Phe Lys Val His Asn Tyr Met Ser
225   230   235   240

Pro Thr Phe Cys Asp His Cys Gly Ser Leu Leu Trp Gly Leu Val Lys
                245   250   255

Gln Gly Leu Lys Cys Glu Asp Cys Gly Met Asn Val His His Lys Cys
            260   265   270

Arg Glu Lys Val Ala Asn Leu Cys Gly Ile Asn Gln Lys Leu Leu Ala
    275   280   285

Glu Ala Leu Asn Gln Val Thr Gln Arg Ala Ser Arg Arg Ser Asp Ser
    290   295   300

Ala Ser Ser Glu Pro Val Gly Ile Tyr Gln Gly Phe Glu Lys Lys Thr
305   310   315   320

Gly Val Ala Gly Glu Asp Met Gln Asp Asn Ser Gly Thr Tyr Gly Lys
                325   330   335

Ile Trp Glu Gly Ser Ser Lys Cys Asn Ile Asn Asn Phe Ile Phe His

                    340   345   350

    Lys Val Leu Gly Lys Gly Ser Phe Gly Lys Val Leu Leu Gly Glu Leu
            355   360   365

    Lys Gly Arg Gly Glu Tyr Ser Ala Ile Lys Ala Leu Lys Lys Asp Val
            370   375   380

    Val Leu Ile Asp Asp Asp Val Glu Cys Thr Met Val Glu Lys Arg Val
    385   390   395   400

    Leu Thr Leu Ala Ala Glu Asn Pro Phe Leu Thr His Leu Ile Cys Thr
                405   410   415

    Phe Gln Thr Lys Asp His Leu Phe Phe Val Met Glu Phe Leu Asn Gly
                420   425   430

    Gly Asp Leu Met Tyr His Ile Gln Asp Lys Gly Arg Phe Glu Leu Tyr
            435   440   445

    Arg Ala Thr Phe Tyr Ala Ala Glu Ile Met Cys Gly Leu Gln Phe Leu
        450   455   460

    His Ser Lys Gly Ile Ile Tyr Arg Asp Leu Lys Leu Asp Asn Val Leu
    465   470   475   480

    Leu Asp Arg Asp Gly His Ile Lys Ile Ala Asp Phe Gly Met Cys Lys
                485   490   495

    Glu Asn Ile Phe Gly Glu Ser Arg Ala Ser Thr Phe Cys Gly Thr Pro
                500   505   510

    Asp Tyr Ile Ala Pro Glu Ile Leu Gln Gly Leu Lys Tyr Thr Phe Ser
            515   520   525

    Val Asp Trp Trp Ser Phe Gly Val Leu Leu Tyr Glu Met Leu Ile Gly
            530   535   540

    Gln Ser Pro Phe His Gly Asp Asp Glu Asp Glu Leu Phe Glu Ser Ile
    545   550   555   560

    Arg Val Asp Thr Pro His Tyr Pro Arg Trp Ile Thr Lys Glu Ser Lys
                565   570   575

    Asp Ile Leu Glu Lys Leu Phe Glu Arg Glu Pro Thr Lys Arg Leu Gly
            580   585   590

```
Met Thr Gly Asn Ile Lys Ile His Pro Phe Phe Lys Thr Ile Asn Trp
        595                 600                 605

Thr Leu Leu Glu Lys Arg Arg Leu Glu Pro Pro Phe Arg Pro Lys Val
        610                 615                 620

Lys Ser Pro Arg Asp Tyr Ser Asn Phe Asp Gln Glu Phe Leu Asn Glu
625                 630                 635                 640

Lys Ala Arg Leu Ser Tyr Ser Asp Lys Asn Leu Ile Asp Ser Met Asp
                645                 650                 655

Gln Ser Ala Phe Ala Gly Phe Ser Phe Val Asn Pro Lys Phe Glu His
                660                 665                 670

Leu Leu Glu Asp
        675


<210>   52
<211>   349
<212>   PRT
<213>   Homo sapiens

<400>   52

Met Ala His Gln Thr Gly Ile His Ala Thr Glu Glu Leu Lys Glu Phe
1               5                   10                  15

Phe Ala Lys Ala Arg Ala Gly Ser Val Arg Leu Ile Lys Val Val Ile
                20                  25                  30

Glu Asp Glu Gln Leu Val Leu Gly Ala Ser Gln Glu Pro Val Gly Arg
            35                  40                  45

Trp Asp Gln Asp Tyr Asp Arg Ala Val Leu Pro Leu Leu Asp Ala Gln
        50                  55                  60

Gln Pro Cys Tyr Leu Leu Tyr Arg Leu Asp Ser Gln Asn Ala Gln Gly
65                  70                  75                  80

Phe Glu Trp Leu Phe Leu Ala Trp Ser Pro Asp Asn Ser Pro Val Arg
                85                  90                  95

Leu Lys Met Leu Tyr Ala Ala Thr Arg Ala Thr Val Lys Lys Glu Phe
                100                 105                 110

Gly Gly Gly His Ile Lys Asp Glu Leu Phe Gly Thr Val Lys Asp Asp
        115                 120                 125
```

Leu Ser Phe Ala Gly Tyr Gln Lys His Leu Ser Ser Cys Ala Ala Pro
    130   135   140

Ala Pro Leu Thr Ser Ala Glu Arg Glu Leu Gln Gln Ile Arg Ile Asn
145   150   155   160

Glu Val Lys Thr Glu Ile Ser Val Glu Ser Lys His Gln Thr Leu Gln
                165   170   175

Gly Leu Ala Phe Pro Leu Gln Pro Glu Ala Gln Arg Ala Leu Gln Gln
            180   185   190

Leu Lys Gln Lys Met Val Asn Tyr Ile Gln Met Lys Leu Asp Leu Glu
        195   200   205

Arg Glu Thr Ile Glu Leu Val His Thr Glu Pro Thr Asp Val Ala Gln
    210   215   220

Leu Pro Ser Arg Val Pro Arg Asp Ala Ala Arg Tyr His Phe Phe Leu
225   230   235   240

Tyr Lys His Thr His Glu Gly Asp Pro Leu Glu Ser Val Val Phe Ile
            245   250   255

Tyr Ser Met Pro Gly Tyr Lys Cys Ser Ile Lys Glu Arg Met Leu Tyr
            260   265   270

Ser Ser Cys Lys Ser Arg Leu Leu Asp Ser Val Glu Gln Asp Phe His
        275   280   285

Leu Glu Ile Ala Lys Lys Ile Glu Ile Gly Asp Gly Ala Glu Leu Thr
    290   295   300

Ala Glu Phe Leu Tyr Asp Glu Val His Pro Lys Gln His Ala Phe Lys
305   310   315   320

Gln Ala Phe Ala Lys Pro Lys Gly Pro Gly Gly Lys Arg Gly His Lys
            325   330   335

Arg Leu Ile Arg Gly Pro Gly Glu Asn Gly Asp Asp Ser
            340   345

<210>   53
<211>   350
<212>   PRT
<213>   Homo sapiens

<400> 53

Met Ser His Gln Thr Gly Ile Gln Ala Ser Glu Asp Val Lys Glu Ile
1   5   10   15

Phe Ala Arg Ala Arg Asn Gly Lys Tyr Arg Leu Leu Lys Ile Ser Ile
            20   25   30

Glu Asn Glu Gln Leu Val Ile Gly Ser Tyr Ser Gln Pro Ser Asp Ser
        35   40   45

Trp Asp Lys Asp Tyr Asp Ser Phe Val Leu Pro Leu Leu Glu Asp Lys
    50   55   60

Gln Pro Cys Tyr Ile Leu Phe Arg Leu Asp Ser Gln Asn Ala Gln Gly
65   70   75   80

Tyr Glu Trp Ile Phe Ile Ala Trp Ser Pro Asp His Ser His Val Arg
            85   90   95

Gln Lys Met Leu Tyr Ala Ala Thr Arg Ala Thr Leu Lys Lys Glu Phe
        100   105   110

Gly Gly Gly His Ile Lys Asp Glu Val Phe Gly Thr Val Lys Glu Asp
        115   120   125

Val Ser Leu His Gly Tyr Lys Lys Tyr Leu Leu Ser Gln Ser Ser Pro
    130   135   140

Ala Pro Leu Thr Ala Ala Glu Glu Glu Leu Arg Gln Ile Lys Ile Asn
145   150   155   160

Glu Val Gln Thr Asp Val Gly Val Asp Thr Lys His Gln Thr Leu Gln
                165   170   175

Gly Val Ala Phe Pro Ile Ser Arg Glu Ala Phe Gln Ala Leu Glu Lys
            180   185   190

Leu Asn Asn Arg Gln Leu Asn Tyr Val Gln Leu Glu Ile Asp Ile Lys
        195   200   205

Asn Glu Ile Ile Ile Leu Ala Asn Thr Thr Asn Thr Glu Leu Lys Asp
    210   215   220

Leu Pro Lys Arg Ile Pro Lys Asp Ser Ala Arg Tyr His Phe Phe Leu
225   230   235   240

```
Tyr Lys His Ser His Glu Gly Asp Tyr Leu Glu Ser Ile Val Phe Ile
            245             250             255

Tyr Ser Met Pro Gly Tyr Thr Cys Ser Ile Arg Glu Arg Met Leu Tyr
            260             265             270

Ser Ser Cys Lys Ser Arg Leu Leu Glu Ile Val Glu Arg Gln Leu Gln
            275             280             285

Met Asp Val Ile Arg Lys Ile Glu Ile Asp Asn Gly Asp Glu Leu Thr
            290             295             300

Ala Asp Phe Leu Tyr Glu Glu Val His Pro Lys Gln His Ala His Lys
305             310             315             320

Gln Ser Phe Ala Lys Pro Lys Gly Pro Ala Gly Lys Arg Gly Ile Arg
                325             330             335

Arg Leu Ile Arg Gly Pro Ala Glu Thr Glu Ala Thr Thr Asp
                340             345             350
```

```
<210>  54
<211>  648
<212>  PRT
<213>  Homo sapiens

<400>  54

Met Glu His Ile Gln Gly Ala Trp Lys Thr Ile Ser Asn Gly Phe Gly
1               5               10              15

Phe Lys Asp Ala Val Phe Asp Gly Ser Ser Cys Ile Ser Pro Thr Ile
            20              25              30

Val Gln Gln Phe Gly Tyr Gln Arg Arg Ala Ser Asp Asp Gly Lys Leu
            35              40              45

Thr Asp Pro Ser Lys Thr Ser Asn Thr Ile Arg Val Phe Leu Pro Asn
            50              55              60

Lys Gln Arg Thr Val Val Asn Val Arg Asn Gly Met Ser Leu His Asp
65              70              75              80

Cys Leu Met Lys Ala Leu Lys Val Arg Gly Leu Gln Pro Glu Cys Cys
                85              90              95

Ala Val Phe Arg Leu Leu His Glu His Lys Gly Lys Lys Ala Arg Leu
                100             105             110
```

105

```
Asp Trp Asn Thr Asp Ala Ala Ser Leu Ile Gly Glu Glu Leu Gln Val
        115             120             125

Asp Phe Leu Asp His Val Pro Leu Thr Thr His Asn Phe Ala Arg Lys
        130             135             140

Thr Phe Leu Lys Leu Ala Phe Cys Asp Ile Cys Gln Lys Phe Leu Leu
145             150             155             160

Asn Gly Phe Arg Cys Gln Thr Cys Gly Tyr Lys Phe His Glu His Cys
                165             170             175

Ser Thr Lys Val Pro Thr Met Cys Val Asp Trp Ser Asn Ile Arg Gln
            180             185             190

Leu Leu Leu Phe Pro Asn Ser Thr Ile Gly Asp Ser Gly Val Pro Ala
        195             200             205

Leu Pro Ser Leu Thr Met Arg Arg Met Arg Glu Ser Val Ser Arg Met
    210             215             220

Pro Val Ser Ser Gln His Arg Tyr Ser Thr Pro His Ala Phe Thr Phe
225             230             235             240

Asn Thr Ser Ser Pro Ser Ser Glu Gly Ser Leu Ser Gln Arg Gln Arg
                245             250             255

Ser Thr Ser Thr Pro Asn Val His Met Val Ser Thr Thr Leu Pro Val
            260             265             270

Asp Ser Arg Met Ile Glu Asp Ala Ile Arg Ser His Ser Glu Ser Ala
        275             280             285

Ser Pro Ser Ala Leu Ser Ser Ser Pro Asn Asn Leu Ser Pro Thr Gly
    290             295             300

Trp Ser Gln Pro Lys Thr Pro Val Pro Ala Gln Arg Glu Arg Ala Pro
305             310             315             320

Val Ser Gly Thr Gln Glu Lys Asn Lys Ile Arg Pro Arg Gly Gln Arg
            325             330             335

Asp Ser Ser Tyr Tyr Trp Glu Ile Glu Ala Ser Glu Val Met Leu Ser
        340             345             350
```

106

Thr Arg Ile Gly Ser Gly Ser Phe Gly Thr Val Tyr Lys Gly Lys Trp
        355   360   365

His Gly Asp Val Ala Val Lys Ile Leu Lys Val Val Asp Pro Thr Pro
        370   375   380

Glu Gln Phe Gln Ala Phe Arg Asn Glu Val Ala Val Leu Arg Lys Thr
385   390   395   400

Arg His Val Asn Ile Leu Leu Phe Met Gly Tyr Met Thr Lys Asp Asn
            405   410   415

Leu Ala Ile Val Thr Gln Trp Cys Glu Gly Ser Ser Leu Tyr Lys His
            420   425   430

Leu His Val Gln Glu Thr Lys Phe Gln Met Phe Gln Leu Ile Asp Ile
        435   440   445

Ala Arg Gln Thr Ala Gln Gly Met Asp Tyr Leu His Ala Lys Asn Ile
    450   455   460

Ile His Arg Asp Met Lys Ser Asn Asn Ile Phe Leu His Glu Gly Leu
465   470   475   480

Thr Val Lys Ile Gly Asp Phe Gly Leu Ala Thr Val Lys Ser Arg Trp
            485   490   495

Ser Gly Ser Gln Gln Val Glu Gln Pro Thr Gly Ser Val Leu Trp Met
        500   505   510

Ala Pro Glu Val Ile Arg Met Gln Asp Asn Asn Pro Phe Ser Phe Gln
        515   520   525

Ser Asp Val Tyr Ser Tyr Gly Ile Val Leu Tyr Glu Leu Met Thr Gly
        530   535   540

Glu Leu Pro Tyr Ser His Ile Asn Asn Arg Asp Gln Ile Ile Phe Met
545   550   555   560

Val Gly Arg Gly Tyr Ala Ser Pro Asp Leu Ser Lys Leu Tyr Lys Asn
            565   570   575

Cys Pro Lys Ala Met Lys Arg Leu Val Ala Asp Cys Val Lys Lys Val
        580   585   590

Lys Glu Glu Arg Pro Leu Phe Pro Gln Ile Leu Ser Ser Ile Glu Leu
        595   600   605

107

```
Leu Gln His Ser Leu Pro Lys Ile Asn Arg Ser Ala Ser Glu Pro Ser
    610             615             620

Leu His Arg Ala Ala His Thr Glu Asp Ile Asn Ala Cys Thr Leu Thr
625             630             635             640

Thr Ser Pro Arg Leu Pro Val Phe
                645
```

<210> 55
<211> 431
<212> PRT
<213> Homo sapiens

<400> 55

```
Met Ala His Ser Pro Val Gln Ser Gly Leu Pro Gly Met Gln Asn Leu
1           5               10              15

Lys Ala Asp Pro Glu Glu Leu Phe Thr Lys Leu Glu Lys Ile Gly Lys
            20              25              30

Gly Ser Phe Gly Glu Val Phe Lys Gly Ile Asp Asn Arg Thr Gln Lys
        35              40              45

Val Val Ala Ile Lys Ile Ile Asp Leu Glu Glu Ala Glu Asp Glu Ile
    50              55              60

Glu Asp Ile Gln Gln Glu Ile Thr Val Leu Ser Gln Cys Asp Ser Pro
65              70              75              80

Tyr Val Thr Lys Tyr Tyr Gly Ser Tyr Leu Lys Asp Thr Lys Leu Trp
                85              90              95

Ile Ile Met Glu Tyr Leu Gly Gly Gly Ser Ala Leu Asp Leu Leu Glu
            100             105             110

Pro Gly Pro Leu Asp Glu Thr Gln Ile Ala Thr Ile Leu Arg Glu Ile
        115             120             125

Leu Lys Gly Leu Asp Tyr Leu His Ser Glu Lys Lys Ile His Arg Asp
    130             135             140

Ile Lys Ala Ala Asn Val Leu Leu Ser Glu His Gly Glu Val Lys Leu
145             150             155             160

Ala Asp Phe Gly Val Ala Gly Gln Leu Thr Asp Thr Gln Ile Lys Arg
```

                    165   170   175

Asn Thr Phe Val Gly Thr Pro Phe Trp Met Ala Pro Glu Val Ile Lys
            180   185   190

Gln Ser Ala Tyr Asp Ser Lys Ala Asp Ile Trp Ser Leu Gly Ile Thr
            195   200   205

Ala Ile Glu Leu Ala Arg Gly Glu Pro Pro His Ser Glu Leu His Pro
    210   215   220

Met Lys Val Leu Phe Leu Ile Pro Lys Asn Asn Pro Pro Thr Leu Glu
225   230   235   240

Gly Asn Tyr Ser Lys Pro Leu Lys Glu Phe Val Glu Ala Cys Leu Asn
            245   250   255

Lys Glu Pro Ser Phe Arg Pro Thr Ala Lys Glu Leu Leu Lys His Lys
            260   265   270

Phe Ile Leu Arg Asn Ala Lys Lys Thr Ser Tyr Leu Thr Glu Leu Ile
            275   280   285

Asp Arg Tyr Lys Arg Trp Lys Ala Glu Gln Ser His Asp Asp Ser Ser
    290   295   300

Ser Glu Asp Ser Asp Ala Glu Thr Asp Gly Gln Ala Ser Gly Gly Ser
305   310   315   320

Asp Ser Gly Asp Trp Ile Phe Thr Ile Arg Glu Lys Asp Pro Lys Asn
            325   330   335

Leu Glu Asn Gly Ala Leu Gln Pro Ser Asp Leu Asp Arg Asn Lys Met
            340   345   350

Lys Asp Ile Pro Lys Arg Pro Phe Ser Gln Cys Leu Ser Thr Ile Ile
            355   360   365

Ser Pro Leu Phe Ala Glu Leu Lys Glu Lys Ser Gln Ala Cys Gly Gly
    370   375   380

Asn Leu Gly Ser Ile Glu Glu Leu Arg Gly Ala Ile Tyr Leu Ala Glu
385   390   395   400

Glu Val Cys Pro Gly Ile Ser Asp Thr Met Val Ala Gln Leu Val Gln
            405   410   415

109

```
Arg Leu Gln Arg Tyr Ser Leu Ser Gly Gly Gly Thr Ser Ser His
            420             425             430
```

```
<210>  56
<211>  426
<212>  PRT
<213>  Homo sapiens
```

```
<400>  56
```

```
Met Ala His Leu Arg Gly Phe Ala Asn Gln His Ser Arg Val Asp Pro
1               5               10              15
```

```
Glu Glu Leu Phe Thr Lys Leu Asp Arg Ile Gly Lys Gly Ser Phe Gly
            20              25              30
```

```
Glu Val Tyr Lys Gly Ile Asp Asn His Thr Lys Glu Val Val Ala Ile
            35              40              45
```

```
Lys Ile Ile Asp Leu Glu Glu Ala Glu Asp Glu Ile Glu Asp Ile Gln
    50              55              60
```

```
Gln Glu Ile Thr Val Leu Ser Gln Cys Asp Ser Pro Tyr Ile Thr Arg
65              70              75              80
```

```
Tyr Phe Gly Ser Tyr Leu Lys Ser Thr Lys Leu Trp Ile Ile Met Glu
                85              90              95
```

```
Tyr Leu Gly Gly Gly Ser Ala Leu Asp Leu Leu Lys Pro Gly Pro Leu
            100             105             110
```

```
Glu Glu Thr Tyr Ile Ala Thr Ile Leu Arg Glu Ile Leu Lys Gly Leu
            115             120             125
```

```
Asp Tyr Leu His Ser Glu Arg Lys Ile His Arg Asp Ile Lys Ala Ala
            130             135             140
```

```
Asn Val Leu Leu Ser Glu Gln Gly Asp Val Lys Leu Ala Asp Phe Gly
145             150             155             160
```

```
Val Ala Gly Gln Leu Thr Asp Thr Gln Ile Lys Arg Asn Thr Phe Val
                165             170             175
```

```
Gly Thr Pro Phe Trp Met Ala Pro Glu Val Ile Lys Gln Ser Ala Tyr
                180             185             190
```

```
Asp Phe Lys Ala Asp Ile Trp Ser Leu Gly Ile Thr Ala Ile Glu Leu
            195             200             205
```

```
Ala Lys Gly Glu Pro Pro Asn Ser Asp Leu His Pro Met Arg Val Leu
    210             215             220

Phe Leu Ile Pro Lys Asn Ser Pro Pro Thr Leu Glu Gly Gln His Ser
225             230             235             240

Lys Pro Phe Lys Glu Phe Val Glu Ala Cys Leu Asn Lys Asp Pro Arg
                245             250             255

Phe Arg Pro Thr Ala Lys Glu Leu Leu Lys His Lys Phe Ile Thr Arg
            260             265             270

Tyr Thr Lys Lys Thr Ser Phe Leu Thr Glu Leu Ile Asp Arg Tyr Lys
            275             280             285

Arg Trp Lys Ser Glu Gly His Gly Glu Glu Ser Ser Ser Glu Asp Ser
    290             295             300

Asp Ile Asp Gly Glu Ala Glu Asp Gly Glu Gln Gly Pro Ile Trp Thr
305             310             315             320

Phe Pro Pro Thr Ile Arg Pro Ser Pro His Ser Lys Leu His Lys Gly
            325             330             335

Thr Ala Leu His Ser Ser Gln Lys Pro Ala Asp Ala Val Lys Arg Gln
            340             345             350

Pro Arg Ser Gln Cys Leu Ser Thr Leu Val Arg Pro Val Phe Gly Glu
        355             360             365

Leu Lys Glu Lys His Lys Gln Ser Gly Gly Ser Val Gly Ala Leu Glu
    370             375             380

Glu Leu Glu Asn Ala Phe Ser Leu Ala Glu Glu Ser Cys Pro Gly Ile
385             390             395             400

Ser Asp Lys Leu Met Val His Leu Val Glu Arg Val Gln Arg Phe Ser
            405             410             415

His Asn Arg Asn His Leu Thr Ser Thr Arg
            420             425
```

```
<210>  57
<211>  463
<212>  PRT
<213>  Homo sapiens
```

<400>   57

Ala Met Thr Ala Gly Thr Thr Thr Thr Phe Pro Met Ser Asn His Thr
1   5   10   15

Arg Glu Arg Val Thr Val Ala Lys Leu Thr Leu Glu Asn Phe Tyr Ser
            20   25   30

Asn Leu Ile Leu Gln His Glu Glu Arg Glu Thr Arg Gln Lys Lys Leu
        35   40   45

Glu Val Ala Met Glu Glu Glu Gly Leu Ala Asp Glu Glu Lys Lys Leu
        50   55   60

Arg Arg Ser Gln His Ala Arg Lys Glu Thr Glu Phe Leu Arg Leu Lys
65   70   75   80

Arg Thr Arg Leu Gly Leu Asp Asp Phe Glu Ser Leu Lys Val Ile Gly
 .   85   90   95

Arg Gly Ala Phe Gly Glu Val Arg Leu Val Gln Lys Lys Asp Thr Gly
            100   105   110

His Ile Tyr Ala Met Lys Ile Leu Arg Lys Ser Asp Met Leu Glu Lys
        115   120 .   125

Glu Gln Val Ala His Ile Arg Ala Glu Arg Asp Ile Leu Val Glu Ala
        130   135   140

Asp Gly Ala Trp Val Val Lys Met Phe Tyr Ser Phe Gln Asp Lys Arg
145   150   155   160

Asn Leu Tyr Leu Ile Met Glu Phe Leu Pro Gly Gly Asp Met Met Thr
            165   170   175

Leu Leu Met Lys Lys Asp Thr Leu Thr Glu Glu Glu Thr Gln Phe Tyr
            180   185   190

Ile Ser Glu Thr Val Leu Ala Ile Asp Ala Ile His Gln Leu Gly Phe
        195   200   205

Ile His Arg Asp Ile Lys Pro Asp Asn Leu Leu Leu Asp Ala Lys Gly
        210   215   220

His Val Lys Leu Ser Asp Phe Gly Leu Cys Thr Gly Leu Lys Lys Ala
225   230   235   240

His Arg Thr Glu Phe Tyr Arg Asn Leu Thr His Asn Pro Pro Ser Asp
            245   250   255

Phe Ser Phe Gln Asn Met Asn Ser Lys Arg Lys Ala Glu Thr Trp Lys
            260   265   270

Lys Asn Arg Arg Gln Leu Ala Tyr Ser Thr Val Gly Thr Pro Asp Tyr
            275   280   285

Ile Ala Pro Glu Val Phe Met Gln Thr Gly Tyr Asn Lys Leu Cys Asp
    290   295   300

Trp Trp Ser Leu Gly Val Ile Met Tyr Glu Met Leu Ile Gly Tyr Pro
305   310   315   320

Pro Phe Cys Ser Glu Thr Pro Gln Glu Thr Tyr Arg Lys Val Met Asn
                325   330   335

Trp Lys Glu Thr Leu Val Phe Pro Pro Glu Val Pro Ile Ser Glu Lys
            340   345   350

Ala Lys Asp Leu Ile Leu Arg Phe Cys Ile Asp Ser Glu Asn Arg Ile
            355   360   365

Gly Asn Ser Gly Val Glu Glu Ile Lys Gly His Pro Phe Phe Glu Gly
    370   375   380

Val Asp Trp Glu His Ile Arg Glu Arg Pro Ala Ala Ile Pro Ile Glu
385   390   395   400

Ile Lys Ser Ile Asp Asp Thr Ser Asn Phe Asp Asp Phe Pro Glu Ser
                405   410   415

Asp Ile Leu Gln Pro Val Pro Asn Thr Thr Glu Pro Asp Tyr Lys Ser
            420   425   430

Lys Asp Trp Val Phe Leu Asn Tyr Thr Tyr Lys Arg Phe Glu Gly Leu
            435   440   445

Thr Gln Arg Gly Ser Ile Pro Thr Tyr Met Lys Ala Gly Lys Leu
    450   455   460

<210>   58
<211>   465
<212>   PRT
<213>   Homo sapiens

113

<400> 58

Met Ala Met Thr Gly Ser Thr Pro Cys Ser Ser Met Ser Asn His Thr
1   5   10   15

Lys Glu Arg Val Thr Met Thr Lys Val Thr Leu Glu Asn Phe Tyr Ser
                20   25   30

Asn Leu Ile Ala Gln His Glu Glu Arg Glu Met Arg Gln Lys Lys Leu
            35   40   45

Glu Lys Val Met Glu Glu Glu Gly Leu Lys Asp Glu Glu Lys Arg Leu
    50   55   60

Arg Arg Ser Ala His Ala Arg Lys Glu Thr Glu Phe Leu Arg Leu Lys
65   70   75   80

Arg Thr Arg Leu Gly Leu Glu Asp Phe Glu Ser Leu Lys Val Ile Gly
            85   90   95

Arg Gly Ala Phe Gly Glu Val Arg Leu Val Gln Lys Lys Asp Thr Gly
            100   105   110

His Val Tyr Ala Met Lys Ile Leu Arg Lys Ala Asp Met Leu Glu Lys
        115   120   125

Glu Gln Val Gly His Ile Arg Ala Glu Arg Asp Ile Leu Val Glu Ala
    130   135   140

Asp Ser Leu Trp Val Val Lys Met Phe Tyr Ser Phe Gln Asp Lys Leu
145   150   155   160

Asn Leu Tyr Leu Ile Met Glu Phe Leu Pro Gly Gly Asp Met Met Thr
            165   170   175

Leu Leu Met Lys Lys Asp Thr Leu Thr Glu Glu Glu Thr Gln Phe Tyr
            180   185   190

Ile Ala Glu Thr Val Leu Ala Ile Asp Ser Ile His Gln Leu Gly Phe
        195   200   205

Ile His Arg Asp Ile Lys Pro Asp Asn Leu Leu Leu Asp Ser Lys Gly
    210   215   220

His Val Lys Leu Ser Asp Phe Gly Leu Cys Thr Gly Leu Lys Lys Ala
225   230   235   240

His Arg Thr Glu Phe Tyr Arg Asn Leu Asn His Ser Leu Pro Ser Asp
            245   250   255

Phe Thr Phe Gln Asn Met Asn Ser Lys Arg Lys Ala Glu Thr Trp Lys
            260   265   270

Arg Asn Arg Arg Gln Leu Ala Phe Ser Thr Val Gly Thr Pro Asp Tyr
            275   280   285

Ile Ala Pro Glu Val Phe Met Gln Thr Gly Tyr Asn Lys Leu Cys Asp
    290   295   300

Trp Trp Ser Leu Gly Val Ile Met Tyr Glu Met Leu Ile Gly Tyr Pro
305   310   315   320

Pro Phe Cys Ser Glu Thr Pro Gln Glu Thr Tyr Lys Lys Val Met Asn
            325   330   335

Trp Lys Glu Thr Leu Thr Phe Pro Pro Glu Val Pro Ile Ser Glu Lys
            340   345   350

Ala Lys Asp Leu Ile Leu Arg Phe Cys Cys Glu Trp Glu His Arg Ile
            355   360   365

Gly Ala Pro Gly Val Glu Glu Ile Lys Ser Asn Ser Phe Phe Glu Gly
    370   375   380

Val Asp Trp Glu His Ile Arg Glu Arg Pro Ala Ala Ile Ser Ile Glu
385   390   395   400

Ile Lys Ser Ile Asp Asp Thr Ser Asn Phe Asp Glu Phe Pro Glu Ser
            405   410   415

Asp Ile Leu Lys Pro Thr Val Ala Thr Ser Asn His Pro Glu Thr Asp
            420   425   430

Tyr Lys Asn Lys Asp Trp Val Phe Ile Asn Tyr Thr Tyr Lys Arg Phe
            435   440   445

Glu Gly Leu Thr Ala Arg Gly Ala Ile Pro Ser Tyr Met Lys Ala Ala
    450   455   460

Lys
465

<210> 59
<211> 406

115

```
<212>  PRT
<213>  Homo sapiens

<400>  59
```

Met Met Glu Glu Leu His Ser Leu Asp Pro Arg Arg Gln Glu Leu Leu
1   5   10   15

Glu Ala Arg Phe Thr Arg Ser Leu Cys Ser Met Gly Ser Leu Ser Asp
            20   25   30

Lys Glu Val Glu Thr Pro Glu Lys Lys Gln Asn Asp Gln Arg Lys Trp
        35   40   45

Lys Arg Lys Ala Glu Pro His Glu Thr Ser Gln Gly Lys Gly Thr Ala
    50   55   60

Gly Gly Arg Lys Ile Ser Asp Tyr Phe Glu Phe Ala Gly Gly Ser Gly
65   70   75   80

Pro Gly Thr Ser Pro Gly Arg Lys Ser Tyr Gln Ala Ser Glu Lys Asp
            85   90   95

Lys Phe Thr Glu Gly Arg Asp Arg Gln Arg Lys Met Leu Ala Lys Arg
            100   105   110

Lys Pro Pro Ala Met Gly Gln Asp Pro Pro Ala Thr Ser Glu Gln Lys
    115   120   125

Gln Trp Lys Ser Arg Thr Asn Gly Ala Glu Asn Lys Thr Leu Thr Leu
    130   135   140

Ala Glu Tyr His Glu Gln Glu Glu Ile Phe Lys Leu Arg Leu Gly His
145   150   155   160

Leu Lys Lys Glu Glu Ala Glu Ile Gln Ala Glu Leu Glu Arg Leu Glu
                165   170   175

Arg Val Arg Asn Leu Arg Ile Gly Glu Leu Lys Arg Ile His Asn Glu
            180   185   190

Asp Asn Ser Gln Phe Lys Asp His Pro Met Leu Asn Asp Arg Tyr Leu
            195   200   205

Leu Leu His Leu Leu Asp Arg Gly Gly Phe Ser Lys Val Tyr Lys Ala
    210   215   220

Phe Glu Leu Ile Glu Gln Arg Tyr Val Ala Val Lys Ile His Gln Leu

225   230   235   240

Asn Lys Asn Trp Arg Asp Glu Lys Lys Glu Asn Tyr His Lys His Ala
            245   250   255

Cys Arg Glu Tyr Trp Ile His Lys Glu Leu Asp His Pro Arg Ile Ile
            260   265   270

Lys Leu Tyr Asp Tyr Phe Ser Leu Asp Thr Asp Ser Phe Cys Thr Val
            275   280   285

Leu Glu Tyr Cys Glu Gly Asn Asp Leu Asn Phe Tyr Leu Lys Arg His
    290   295   300

Lys Leu Met Ser Glu Lys Glu Ala Trp Ser Ile Ile Met Gln Thr Val
305   310   315   320

Asn Ala Leu Lys Tyr Leu Asn Lys Ile Lys Pro Pro Ile Ile His Tyr
            325   330   335

Asp Leu Lys Pro Gly Asn Ile Leu Leu Val Asn Gly Thr Val Cys Gly
            340   345   350

Glu Arg Lys Ile Thr Glu Leu Gly Leu Ser Lys Ile Met Asp Asp Asp
            355   360   365

Ser Tyr Asn Ser Cys Leu Ser Gly Gly Lys Pro Phe Gly Tyr Asn Gln
    370   375   380

Ser Gln Gln Asp Ile Leu Gln Glu Asn Thr Ile Leu Lys Ala Ala Glu
385   390   395   400

Val Gln Phe Pro Pro Lys
            405

<210>   60
<211>   749
<212>   PRT
<213>   Homo sapiens

<400>   60

Met Glu Glu Leu His Ser Leu Asp Pro Arg Arg Gln Glu Leu Leu Glu
1   5   10   15

Ala Arg Phe Thr Gly Val Gly Val Ser Lys Gly Pro Leu Asn Ser Glu
            20   25   30

```
Ser Ser Asn Gln Ser Leu Cys Ser Val Gly Ser Leu Ser Asp Lys Glu
        35              40              45

Val Glu Thr Pro Glu Lys Lys Gln Asn Asp Gln Arg Asn Arg Lys Arg
    50              55              60

Lys Ala Glu Pro Tyr Glu Thr Ser Gln Gly Lys Gly Thr Pro Arg Gly
65              70              75              80

His Lys Ile Ser Asp Tyr Phe Glu Phe Ala Gly Gly Ser Ala Pro Gly
            85              90              95

Thr Ser Pro Gly Arg Ser Val Pro Pro Val Ala Arg Ser Ser Pro Gln
            100             105             110

His Ser Leu Ser Asn Pro Leu Pro Arg Arg Val Glu Gln Pro Leu Tyr
        115             120             125

Gly Leu Asp Gly Ser Ala Ala Lys Glu Ala Thr Glu Glu Gln Ser Ala
    130             135             140

Leu Pro Thr Leu Met Ser Val Met Leu Ala Lys Pro Arg Leu Asp Thr
145             150             155             160

Glu Gln Leu Ala Gln Arg Gly Ala Gly Leu Cys Phe Thr Phe Val Ser
            165             170             175

Ala Gln Gln Asn Ser Pro Ser Ser Thr Gly Ser Gly Asn Thr Glu His
            180             185             190

Ser Cys Ser Ser Gln Lys Gln Ile Ser Ile Gln His Arg Arg Thr Gln
        195             200             205

Ser Asp Leu Thr Ile Glu Lys Ile Ser Ala Leu Glu Asn Ser Lys Asn
    210             215             220

Ser Asp Leu Glu Lys Lys Glu Gly Arg Ile Asp Asp Leu Leu Arg Ala
225             230             235             240

Asn Cys Asp Leu Arg Arg Gln Ile Asp Glu Gln Gln Lys Met Leu Glu
            245             250             255

Lys Tyr Lys Glu Arg Leu Asn Arg Cys Val Thr Met Ser Lys Lys Leu
            260             265             270

Leu Ile Glu Lys Ser Lys Gln Glu Lys Met Ala Cys Arg Asp Lys Ser
    275             280             285
```

118

```
Met Gln Asp Arg Leu Arg Leu Gly His Phe Thr Thr Val Arg His Gly
    290                 295             300
```

```
Ala Ser Phe Thr Glu Gln Trp Thr Asp Gly Tyr Ala Phe Gln Asn Leu
305                 310             315                 320
```

```
Ile Lys Gln Gln Glu Arg Ile Asn Ser Gln Arg Glu Glu Ile Glu Arg
                325             330             335
```

```
Gln Arg Lys Met Leu Ala Lys Arg Lys Pro Pro Ala Met Gly Gln Ala
            340             345             350
```

```
Pro Pro Ala Thr Asn Glu Gln Lys Gln Arg Lys Ser Lys Thr Asn Gly
        355             360             365
```

```
Ala Glu Asn Glu Thr Leu Thr Leu Ala Glu Tyr His Glu Gln Glu Glu
    370             375             380
```

```
Ile Phe Lys Leu Arg Leu Gly His Leu Lys Lys Glu Glu Ala Glu Ile
385             390             395                 400
```

```
Gln Ala Glu Leu Glu Arg Leu Glu Arg Val Arg Asn Leu His Ile Arg
            405             410             415
```

```
Glu Leu Lys Arg Ile His Asn Glu Asp Asn Ser Gln Phe Lys Asp His
            420             425             430
```

```
Pro Thr Leu Asn Asp Arg Tyr Leu Leu Leu His Leu Leu Gly Arg Gly
        435             440             445
```

```
Gly Phe Ser Glu Val Tyr Lys Ala Phe Asp Leu Thr Glu Gln Arg Tyr
    450             455             460
```

```
Val Ala Val Lys Ile His Gln Leu Asn Lys Asn Trp Arg Asp Glu Lys
465             470             475                 480
```

```
Lys Glu Asn Tyr His Lys His Ala Cys Arg Glu Tyr Arg Ile His Lys
                485             490             495
```

```
Glu Leu Asp His Pro Arg Ile Val Lys Leu Tyr Asp Tyr Phe Ser Leu
            500             505             510
```

```
Asp Thr Asp Ser Phe Cys Thr Val Leu Glu Tyr Cys Glu Gly Asn Asp
        515             520             525
```

119

Leu Asp Phe Tyr Leu Lys Gln His Lys Leu Met Ser Glu Lys Glu Ala
    530   535   540

Arg Ser Ile Ile Met Gln Ile Val Asn Ala Leu Lys Tyr Leu Asn Glu
545   550   555   560

Ile Lys Pro Pro Ile Ile His Tyr Asp Leu Lys Pro Gly Asn Ile Leu
                565   570   575

Leu Val Asn Gly Thr Ala Cys Gly Glu Ile Lys Ile Thr Asp Phe Gly
            580   585   590

Leu Ser Lys Ile Met Asp Asp Asp Ser Tyr Asn Ser Val Asp Gly Met
        595   600   605

Glu Leu Thr Ser Gln Gly Ala Gly Thr Tyr Trp Tyr Leu Pro Pro Glu
    610   615   620

Cys Phe Val Val Gly Lys Glu Pro Pro Lys Ile Ser Asn Lys Val Asp
625   630   635   640

Val Trp Ser Val Gly Val Ile Phe Tyr Gln Cys Leu Tyr Gly Arg Lys
            645   650   655

Pro Phe Gly His Asn Gln Ser Gln Gln Asp Ile Leu Gln Glu Asn Thr
            660   665   670

Ile Leu Lys Ala Thr Glu Val Gln Phe Pro Pro Lys Pro Val Val Thr
        675   680   685

Pro Glu Ala Lys Ala Phe Ile Arg Arg Cys Leu Ala Tyr Arg Lys Arg
    690   695   700

Asp Arg Ile Asp Val Gln Gln Leu Ala Cys Asp Pro Tyr Leu Leu Pro
705   710   715   720

His Ile Arg Lys Ser Val Ser Thr Ser Ser Pro Ala Gly Ala Ala Ile
            725   730   735

Ala Ser Thr Ser Gly Ala Ser Asn Asn Ser Ser Ser Asn
            740   745

<210>   61
<211>   574
<212>   PRT
<213>   Homo sapiens

<400>   61

120

Met Glu Ala Ser Leu Gly Ile Gln Met Asp Glu Pro Met Ala Phe Ser
1   5   10   15

Pro Gln Arg Asp Arg Phe Gln Ala Glu Gly Ser Leu Lys Lys Asn Glu
            20   25   30

Gln Asn Phe Lys Leu Ala Gly Val Lys Lys Asp Ile Glu Lys Leu Tyr
        35   40   45

Glu Ala Val Pro Gln Leu Ser Asn Val Phe Lys Ile Glu Asp Lys Ile
    50   55   60

Gly Glu Gly Thr Phe Ser Ser Val Tyr Leu Ala Thr Ala Gln Leu Gln
65   70   75   80

Val Gly Pro Glu Glu Lys Ile Ala Leu Lys His Leu Ile Pro Thr Ser
            85   90   95

His Pro Ile Arg Ile Ala Ala Glu Leu Gln Cys Leu Thr Val Ala Gly
            100   105   110

Gly Gln Asp Asn Val Met Gly Val Lys Tyr Cys Phe Arg Lys Asn Asp
        115   120   125

His Val Val Ile Ala Met Pro Tyr Leu Glu His Glu Ser Phe Leu Asp
    130   135   140

Ile Leu Asn Ser Leu Ser Phe Gln Glu Val Arg Glu Tyr Met Leu Asn
145   150   155   160

Leu Phe Lys Ala Leu Lys Arg Ile His Gln Phe Gly Ile Val His Arg
            165   170   175

Asp Val Lys Pro Ser Asn Phe Leu Tyr Asn Arg Arg Leu Lys Lys Tyr
            180   185   190

Ala Leu Val Asp Phe Gly Leu Ala Gln Gly Thr His Asp Thr Lys Ile
        195   200   205

Glu Leu Leu Lys Phe Val Gln Ser Glu Ala Gln Gln Glu Arg Cys Ser
    210   215   220

Gln Asn Lys Ser His Ile Ile Thr Gly Asn Lys Ile Pro Leu Ser Gly
225   230   235   240

Pro Val Pro Lys Glu Leu Asp Gln Gln Ser Thr Thr Lys Ala Ser Val

```
                    245                    250                    255

        Lys Arg Pro Tyr Thr Asn Ala Gln Ile Gln Ile Lys Gln Gly Lys Asp
                    260                    265                    270


        Gly Lys Glu Gly Ser Val Gly Leu Ser Val Gln Arg Ser Val Phe Gly
                    275                    280                    285


        Glu Arg Asn Phe Asn Ile His Ser Ser Ile Ser His Glu Ser Pro Ala
                    290                    295                    300


        Val Lys Leu Met Lys Gln Ser Lys Thr Val Asp Val Leu Ser Arg Lys
        305                    310                    315                    320


        Leu Ala Thr Lys Lys Lys Ala Ile Ser Thr Lys Val Met Asn Ser Ala
                    325                    330                    335


        Val Met Arg Lys Thr Ala Ser Ser Cys Pro Ala Ser Leu Thr Cys Asp
                    340                    345                    350


        Cys Tyr Ala Thr Asp Lys Val Cys Ser Ile Cys Leu Ser Arg Arg Gln
                    355                    360                    365


        Gln Val Ala Pro Arg Ala Gly Thr Pro Gly Phe Arg Ala Pro Glu Val
                    370                    375                    380


        Leu Thr Lys Cys Pro Asn Gln Thr Thr Ala Ile Asp Met Trp Ser Ala
        385                    390                    395                    400


        Gly Val Ile Phe Leu Ser Leu Leu Ser Gly Arg Tyr Pro Phe Tyr Lys
                    405                    410                    415


        Ala Ser Asp Asp Leu Thr Ala Leu Ala Gln Ile Met Thr Ile Arg Gly
                    420                    425                    430


        Ser Arg Glu Thr Ile Gln Ala Ala Lys Thr Phe Gly Lys Ser Ile Leu
                    435                    440                    445


        Cys Ser Lys Glu Val Pro Ala Gln Asp Leu Arg Lys Leu Cys Glu Arg
                    450                    455                    460


        Leu Arg Gly Met Asp Ser Ser Thr Pro Lys Leu Thr Ser Asp Ile Gln
        465                    470                    475                    480


        Gly His Ala Ser His Gln Pro Ala Ile Ser Glu Lys Thr Asp His Lys
                    485                    490                    495
```

Ala Ser Cys Leu Val Gln Thr Pro Pro Gly Gln Tyr Ser Gly Asn Ser
            500   505   510

Phe Lys Lys Gly Asp Ser Asn Ser Cys Glu His Cys Phe Asp Glu Tyr
            515   520   525

Asn Thr Asn Leu Glu Gly Trp Asn Glu Val Pro Asp Glu Ala Tyr Asp
    530   535   540

Leu Leu Asp Lys Leu Leu Asp Leu Asn Pro Ala Ser Arg Ile Thr Ala
545   550   555   560

Glu Glu Ala Leu Leu His Pro Phe Phe Lys Asp Met Ser Leu
            565   570

<210>   62
<211>   351
<212>   PRT
<213>   Homo sapiens

<400>   62

Met Gly Asn Ala Pro Ala Lys Lys Asp Thr Glu Gln Glu Glu Ser Val
1   5   10   15

Asn Glu Phe Leu Ala Lys Ala Arg Gly Asp Phe Leu Tyr Arg Trp Gly
            20   25   30

Asn Pro Ala Gln Asn Thr Ala Ser Ser Asp Gln Phe Glu Arg Leu Arg
            35   40   45

Thr Leu Gly Met Gly Ser Phe Gly Arg Val Met Leu Val Arg His Gln
    50   55   60

Glu Thr Gly Gly His Tyr Ala Met Lys Ile Leu Asn Lys Gln Lys Val
65   70   75   80

Val Lys Met Lys Gln Val Glu His Ile Leu Asn Glu Lys Arg Ile Leu
            85   90   95

Gln Ala Ile Asp Phe Pro Phe Leu Val Lys Leu Gln Phe Ser Phe Lys
            100   105   110

Asp Asn Ser Tyr Leu Tyr Leu Val Met Glu Tyr Val Pro Gly Gly Glu
            115   120   125

Met Phe Ser Arg Leu Gln Arg Val Gly Arg Phe Ser Glu Pro His Ala
    130   135   140

123

```
Cys Phe Tyr Ala Ala Gln Val Val Leu Ala Val Gln Tyr Leu His Ser
145             150             155             160

Leu Asp Leu Ile His Arg Asp Leu Lys Pro Glu Asn Leu Leu Ile Asp
                165             170             175

Gln Gln Gly Tyr Leu Gln Val Thr Asp Phe Gly Phe Ala Lys Arg Val
            180             185             190

Lys Gly Arg Thr Trp Thr Leu Cys Gly Thr Pro Glu Tyr Leu Ala Pro
            195             200             205

Glu Ile Ile Leu Ser Lys Gly Tyr Asn Lys Ala Val Asp Trp Trp Ala
    210             215             220

Leu Gly Val Leu Ile Tyr Glu Met Ala Val Gly Phe Pro Pro Phe Tyr
225             230             235             240

Ala Asp Gln Pro Ile Gln Ile Tyr Glu Lys Ile Val Ser Gly Arg Val
            245             250             255

Arg Phe Pro Ser Lys Leu Ser Ser Asp Leu Lys His Leu Leu Arg Ser
            260             265             270

Leu Leu Gln Val Asp Leu Thr Lys Arg Phe Gly Asn Leu Arg Asn Gly
        275             280             285

Val Gly Asp Ile Lys Asn His Lys Trp Phe Ala Thr Thr Ser Trp Ile
    290             295             300

Ala Ile Tyr Glu Lys Lys Val Glu Ala Pro Phe Ile Pro Lys Tyr Thr
305             310             315             320

Gly Pro Gly Asp Ala Ser Asn Phe Asp Asp Tyr Glu Glu Glu Glu Leu
            325             330             335

Arg Ile Ser Ile Asn Glu Lys Cys Ala Lys Glu Phe Ser Glu Phe
            340             345             350
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